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NOTICES:—All communications relating to editorial matter should be addressed to the Editor, who will be pleased to consider articles or contributions dealing with modern chemical developments or suggestions bearing upon the advancement of the chemical industry in this country. Communications relating to advertisements or general matters should be addressed to the Manager.

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Anglo-German Chemical Relations

READERS of THE CHEMICAL AGE who have followed our references to the aims of Imperial Chemical Industries, Ltd., will have noted two points. The first is that it is primarily imperial in its outlook, and that it also contemplates a co-operative relation towards European chemical interests in general. The second is that no such relation has so far been suggested towards the chemical interests of the United States. The latter point has been duly noted by American chemical leaders, not with anything approaching apprehension, for they believe themselves capable of holding their own, but with at least a realisation that Europe and the British Empire, in chemical matters, intend to work more closely together than in the past.

Reports have been published this week which, although still unconfirmed officially, appear to be based on sound reasons. They indicate that matters are moving towards a definite trade understanding between the I. G. Farbenindustrie and Imperial Chemical Industries. The frequent discussions which

of late have taken place between the heads of the British and German chemical industries and the increasing friendliness developed during their progress must have prepared observers for further advances. From Cologne it is now announced that the I. G. proposes to increase its capital by £5,000,000 to furnish funds for "a fusion with equivalent British interests." No official confirmation of this has been made in this country, but the report is treated as one of substance. The obvious purpose of such a scheme would be the limitation of price-cutting competition and the exchange of technical knowledge on research results, manufacturing processes, and marketing methods. Dyestuffs and fertilisers, it is suggested, will be the first chemical products to come under the scheme. This is what one would expect, and it constitutes a remarkable testimony to the rapid progress of chemical industry in this country that Great Britain should now be able to treat on level terms respecting two great industries which ten years ago Germany practically monopolised. Beyond this there are prospective developments of the highest importance in the field of fuel technology. It is rumoured, in fact, that the I.C.I. have recently acquired the rights in the British Bergius syndicate. On all these points, we imagine, Germany can safely be said to be in advance of other nations, and its willingness to come to terms on matters respecting which it is scientifically so strong requires some explanation.

It is possible that this may be found in the monetary situation of Germany. Reports reach us constantly from competent observers who have been visiting German chemical works, of the excellence of their organisation, of the characteristic team work that is going on, and of their advanced research work in the newer fields. Trade and industry are admittedly very active, but what has been called the "capital famine is not at an end, and the demand for financial accommodation remains heavy. The Germans, generally good at facing facts, may well see the advantage of making concessions on one side in order to secure help they vitally need on another. On Tuesday the German Reichsbank advanced its rate of discount from 6 to 7 per cent., and its rate of interest on advances from 7 to 8 per cent. The sterling-mark exchange was not materially affected, but some of the German loans recently floated in this country were further depressed and stand at considerably below their issue price. Well informed authorities on German chemical industry have every confidence in the country's rapid recovery, but meanwhile progress is made difficult by monetary stringency, and this may easily explain Germany's readiness to revise its tariff system and to accept terms of co-operation that might not have been considered in normal conditions.

Svante Arrhenius

THE regrettable death, a few days ago, of Professor Svante Arrhenius is a milestone in a very remarkable period in the history of chemistry. It is now forty years since Arrhenius, seizing on the observations of van't Hoff with regard to the anomalous osmotic behaviour of acids, bases, and salts in solution, showed that the anomalies could be quantitatively explained by the assumption that these substances were electrolytically dissociated in solution. It is true that the qualitative aspect of this theory had been mooted earlier, but it was Arrhenius who placed it on a solid quantitative basis. In respect of its effect on the progress of science, this work takes rank with the periodic classification of the elements and the atomic theory. It is firmly embedded in modern views on chemistry; its aid has been invoked in the recent development of X-ray investigations of the structure of crystals; and in biological work it is of growing importance.

In the forty years which have elapsed since Arrhenius first put forward his views, the whole face of chemistry, and indeed of science in general, has changed. The greatest developments are those which have occurred in the field of physical chemistry, and many of them have been rooted directly in the ionic theory. It must be admitted that the behaviour of substances in solution is not so simple as it once promised to be, but this does not detract from the greatness of the theory. If we are to get a true picture of its importance, we must think of the spectacle that would be presented by modern chemistry in its absence: only then can we gain a clear insight into the wonderful simplification and order which it has introduced.

Chemistry as it is known to the present generation is mainly based on the atomic theory, the periodic classification of the elements, the views of valency developed by Frankland and others, and the ionic theory. Arrhenius was one of the pioneers who helped to lay this basis, and his death breaks one of our tew links with the period when modern chemistry was still in the making.

The Fuel Conference of 1928

Some interesting conversations took place at the meetings just concluded at Cernobbio, North Italy, of the International Executive Council of the World Power Conference between the British and foreign representatives regarding the technical programme for the international fuel conference that meets in the Imperial Institute, South Kensington, in September-October of next year. It was obvious from these informal discussions that the provisional technical programme had been favourably received and that the fuel conference had aroused widespread international interest. Dr. E. W. Smith, joint technical secretary, addressing a special meeting on behalf of the British Committee, explained that the technical programme was only to be regarded as indicating the scope of the conference, and was not the programme of actual papers. The British Committee do not wish to dictate regarding individual contributions, but it is hoped as the result of the conversations with international representatives that it will be possible to

decide what contributions should be made by each country. If each country were to attempt to cover the whole programme, the Conference would be far too large. Germany, for instance, is interested in most fuel problems, but it is suggested that it should concentrate on questions on which it is specialising, such as gas distribution, utilisation of lignite, carbonisation under static means, etc. France might specialise, for instance, on the production of alcohol. Spain is anxious to become independent of other countries for its fuel supplies, and it would be interesting to hear how it proposes to do this. Each country has its own problems, and subjects in which it specialises, and it is hoped that each will make its own essentially national contribution, with the object of pooling knowledge and experience internationally.

Each country was invited to submit to the British Committee a skeleton of each paper it proposed to present for a preliminary exchange of views regarding the subject matter. The paper itself would probably have to be written by an individual, but should receive the careful scrutiny of the representative body under whose authority it was to be issued, to the exclusion of all proprietary and specialised individual opinions. The desire of the British Committee to receive suggestions from all interested countries was emphasised, but as in some cases these may be of a conflicting character, it will be necessary for the British Committee to sift these suggestions before deciding, in consultation with other countries, what final line of action should be adopted. The Conference is not to be a theoretical conference, but it is hoped that it will be of a thoroughly practical nature, based on sound technical lines directly related to practical economics.

The Government Chemist's Report

THE report of the Government Chemist on the work of the Government laboratory forms the usual record of quiet and efficient service. The amount of work which devolves on this department may be judged from the fact that the number of samples examined in the course of a year is nearly half a million. In addition, it must be remembered that the advice of the department is freely sought, on every subject under the sun, by other State departments. A few of the points raised in the report are deserving of special mention. As exemplifying the effect of the Public Health (Preservatives, etc., in Food) Regulations, the main provisions of which came into force on January 1, 1927, it is stated that during the portion of the year [1926] from April to November, when the preservative regulations were not in force, 77 per cent. of the samples of margarine received for examination under the Food and Drugs Act, 1899, contained boron preservatives, whereas this substance has not been found in any of the samples received since the beginning of December.

Another matter of some importance, though it is only touched on briefly, is that of the effect of effluents from beet sugar factories on river waters. Some interesting results were obtained as regards the diurnal variation of the dissolved oxygen and ammoniacal nitrogen. The question of these effluents is being discussed very widely, and it is to be hoped that

definite action will be taken in the near future. Especial interest attaches to the work carried out in the Government laboratory on the quantity of insecticide remaining on apples after spraying. In view of the complaints made in this regard against imported fruit, it is satisfactory to note that a considerable proportion of the insecticide (containing lead and arsenic) was lost during weathering subsequent to spraying, and that the remainder was almost wholly on the exterior of the fruit. In no case did the quantity of arsenic on the fruit as ready for marketing reach the point generally accepted as undesirable in foods. There has been no reason for supposing that this source of arsenic could ever be regarded as really dangerous, but the facts now stated should allay fears that may have been aroused by certain prosecutions in regard to imported fruit.

Methods of Coal Analysis

THE British Engineering Standards Association announce the calling of a conference resulting from a request of the Committee of the Privy Council on Scientific and Industrial Research that British national standard methods of coal analysis should be adopted. It is suggested that report No. 7-" Methods of Analysis of Coal" as drawn up by the Fuel Research Board -should be used as a basis for the preparation of a British Standard Specification for National use. The conference is being called for the purpose of ascertaining if there is a consensus of opinion in favour of setting up a B.E.S.A. Committee to deal with the subject, and delegates have been invited from all interested bodies to attend. The Committee of the Privy Council state that the question of methods of analysis is one of increasing importance owing to the growing tendency to purchase coal to specification, and this is especially so with foreign purchasers. They consider that the adoption of national standard methods of analysis would be of considerable advantage, both to the producers and the users of coal.

Another Pittsburg Conference

Information reaches us from the Carnegie Institute of Technology in Pittsburg, Pennsylvania, U.S.A., that a second international conference on bituminous coal will take place there during November, 1928. This decision to call a second congress of world scientists and fuel technologists has been made, we understand, as a result of the widespread interest aroused throughout the world by the first conference on bituminous coal held at the Carnegie Institute in November of last year. That conference, which was devoted to discussions of the better utilisation of bituminous coal, was attended by 1,700 persons, including delegates from thirteen different countries. Among the European scientists who took part were Dr. Friedrich Bergius, Heidelberg; Professor Franz Fischer, director of the Institute of Coal Research, Mulheim-Ruhr; General Georges Patart, Paris; Dr. C. H. Lander, director of the British Fuel Research station, Dr. R. Lessing, Mr. Geoffrey M. Gill, and Mr. Harald Nielsen, London.

Although no definite programme for the second conference has yet been arranged, it is expected that

the 1928 session will cover the latest developments in obtaining substitutes for gasoline from coal, power from coal, low and high temperature distillation processes, smokeless fuel, gasification of coal, the utilisation of coal tar products, coal as a source for fertilisers, and coal in relation to the production of fixed nitrogen. Dr. Thomas S. Baker, president of the Carnegie Institute, who called the first conference, visited Europe this summer for the purpose of discussing arrangements for the second conference with well-known scientists in France and Germany. He intends to pay another visit to Europe next year to invite speakers and delegates.

Books Received

TRADE. By Sir Ernest J. P. Benn. (Benn's Sixpenny Library, No. 177.) London: Ernest Benn, Ltd. Pp. 80. 6d.

AN INTRODUCTION TO THE SCIENTIFIC STUDY OF THE SOIL. By Norman M. Comber. London: Edward Arnold and Co. Pp. 192. 7s. 6d.

MODERN CEREAL CHEMISTRY. By D. W. Kent-Jones. Liverpool: Northern Publishing Co., Ltd. Pp. 446. 25s.

A DICTIONARY OF APPLIED CHEMISTRY. Vol. VII. By Sir Edward Thorpe. London: Longmans. Green and Co. Ltd.

Edward Thorpe. London: Longmans, Green and Co., Ltd.

Pp. 760. 608.

THEORETICAL AND EXPERIMENTAL PHYSICAL CHEMISTRY. By
Dr. James Codrington Croker and Dr. Frank Matthews.
London: J. and A. Churchill. Pp. 582. 218.

The Calendar		
Oct.		
3-15	Manchester Daily Dispatch Artificial Silk Exhibition. Daily 11 a.m 9.30 p.m. 11 a.m2.30 p.m., Trade buyers only.	City Hall, Deansgate, Manchester.
10	Ceramic Society: "The Blending of Clays." R. C. Callister. "A Work- ing Model of China Clay Works." R. W. Varcoe.	North Staffordshire Technical College, Stoke-on-Trent.
10	Sir John Cass Technical Institute: Inaugural Ceremony; Address by Sir William H. Beveridge. 8.15 p.m.	Jewry Street, Aldgate, London.
11	Institution of Petroleum Technologists, 5.30 p.m.	Royal Society of Arts, John Street, Adel- phi, London.
12	Oil and Colour Chemists' Association: "Colour Standardisation and Testing in the Paint and Colour Industry." 8 p.m.	Royal Society of Arts, John Street, Adelphi, London.
12	Institution of the Rubber Industry (London Section): "Coagulation, Structure and Plasticity of Crude Rubber." Dr. O. de Vries. 7,30 p.m.	Engineers' Club, Cov- entry Street, London
12-	Exhibition of Inventions.	Central Hall, West- minster, London.
13	Institute of Metals, London Section: Address by Mr. A. H. Mundey, "Works Economics." 7.30 p.m.	Society of Motor Manufacturers and Traders, Ltd., 83, Pall Mall, London.
13	Optical Society: Ordinary Meeting. 7.30 p.m.	Imperial College of Science and Tech- nology, South Ken- sington, London
14	Institute of Metals, Sheffield Section: Mr. J. H. G. Monypenny, "Science and Industry." 7.30 p.m.	Applied Science De- partment, Univer- sity of Sheffield.
14	Chemical Engineering Group: "A Recent Development of Spray Drying." J. Arthur Reavell. 8 p.m.	Burlington House Piccadilly, London
14,	University of London, University	London.
21	College: Three Public Lectures on "Hydrogen Ion Concentration."	
28	Dr. Phyllis M. Kerridge. 5 p.m.	
16- 27	Société de Chimie Industrielle: Seventh Congress of Industrial Chemistry.	Paris.
19	Institute of Chemistry (London Section): "Chemists and Dividends." S. M. Gluckstein (a director of J. Lyons and Co.). 8 p.m.	30, Russell Square London.

The Work of the Government Laboratory

Government Chemist's Report for the Year

The report of the Government Chemist, Sir Robert Robertson, upon the work of the Government laboratory, for the year ending March 31, 1927 (pp. 42, 1s. 3d.), has just been issued. Below are given notes upon some of the more important topics dealt with in the report.

Most of the work of the Government laboratory is carried out at the laboratory at Clement's Inn Passage, London. The laboratory at the Custom House, London, deals especially with Customs samples, while the chemical stations, to which reference is made in connection with the work for the Board of Customs and Excise, deal with Customs samples and some Excise samples. In addition the department of the Government Chemist maintains the laboratory in the Geological Survey Museum for the analysis of ores for the Survey, and carries out the inspection of foods and supplies for the War Office at the Supply Reserve Depot, Deptford, where also there is a laboratory.

The total number of samples examined in the course of the year, including those dealt with at the chemical stations, was 469,642, as compared with 445,606 in the preceding year, an increase of 24,036. There was a decrease in the number of samples examined at the Custom House branch of 3.594, but the number examined at Clement's Inn showed an increase of 14,716, and at the chemical stations an increase of 12,914. The samples of wine increased from 106,395 to 122,749, but there was again a decrease in the number of tea samples, the number being 34.957, compared with 39,391 last year and 58,022 two years ago. This decrease is due to the examination of the tea being carried out to an increasing extent by trained tea inspectors, who send special samples only to the laboratory. There was an increase of 1,297 in the samples of exported tobacco and snuff, indicating that the increase in exports referred to last year has been maintained.

There were increases in the numbers of samples of cocoa goods, and imported and exported spirituous preparations, and also in the number of samples examined in connection with the subsidy on British sugar. The new duties on silk and artificial silk necessitated the examination of over 22,000 samples during the year, and the work in connection with the Safeguarding of Industries Act again involved the examination of 10,000 samples.

Work for the Ministry of Agriculture and Fisheries

For the Ministry of Agriculture and Fisheries a large number of samples were examined. These included 847 samples of butter, of which three contained more than 16 per cent. of water. The samples of margarine were 341 in number, of which four were found to contain more than 16 per cent. of water. There was no evidence of butter fat in excess of the legal quantity in any of the samples.

Sixty samples of condensed milk, sampled under the provisions of the Sale of Foods and Drugs Act, as well as 153 taken under the Public Health (Condensed Milk) Regulations, were examined. Forty-three samples were reported against. In most of these cases the offence was connected with the labelling as, for example, the omission to place the word "machine-skimmed" immediately before or after the word "milk" in the description of condensed machine-skimmed milk. But in five cases the milk was below the minimum standard quality fixed by the regulations, and in three cases the statement on the label of the quantity of whole milk which the contents of the tin represented was untrue, the amount being overstated. All the samples were free from chemical preservatives. As regards the inspection of factories blending or reworking butter, or where margarine is manufactured, the one sample of butter taken was found to contain vegetable oil, while 3 of the samples of margarine contained water in excess of the legal limit.

Water and Pollution of Rivers

Thirty-six samples of river water and effluents were examined for the Ministry of Agriculture and Fisheries. This work is carried out to ascertain the condition of fishing streams from the point of view of fish life and the effect of certain types of pollution on fish and fish food. In connection with the question of pollution of fishing streams by road drainage, five samples of proprietary road dressings and extracts from

such dressings were examined for harmful or toxic bodies. The services of members of the staff were utilised in the survey of several rivers. A river receiving effluent from a beet sugar factory was under systematic survey during the season to collect information as to the effect of the factory effluent upon the river water. As a result of one set of surveys interesting phenomena were observed in the diurnal variation of the dissolved oxygen and ammoniacal nitrogen.

The Spraying of Apples With Insecticides

Four batches of apples were examined in connection with an investigation which was being carried out at the Agricultural and Horticultural Research Station at Long Ashton, into the question of the quantity of insecticide remaining on apples when gathered for market after spraying at different stages of growth. The quantity of arsenic and lead on apples collected in June a few days after spraying has been compared with the quantity remaining on apples gathered from the same trees in September, and with the quantity present on apples collected from similar trees which underwent a second spraying at the end of July. It was found that a considerable proportion of the insecticide was lost during weathering, and that which remained was almost wholly on the exterior of the fruit. In no case did the quantity of arsenic on the fruit as ready for marketing reach the quantity generally accepted as undesirable in foods.

At the request of the Ministry of Agriculture the Government Chemist called together a committee of chemists to consider the methods in use in the determination of fibre in feeding stuffs and to formulate a method which could be prescribed for use under the Fertilisers and Feeding Stuffs Act, 1926. A process was decided upon and has been investigated, being subsequently communicated to the advisory committee preparing the regulations under the Act.

The work for the Air Ministry consisted chiefly in the examination of various metals and alloys used in aircraft construction, but included soldering and welding fluxes and miscellaneous stores, such as soap, linseed oil and caustic soda, disinfectants, turpentine and turpentine substitutes, solvents, fuel and lubricating oils, coal, paints and varnishes, shellac, formalin, bleaching powder, carbide, oil of vitriol, silicon, and one sample of petrol containing lead tetraethyl. The number of samples dealt with was 778.

The number of samples examined in the year in connection with the duty on beer was 56,725, an increase of 1,198. In the examination of beer and brewing materials for arsenic the number of samples tested, including beer, wort, malt, sugar, and other materials used in brewing was 1,305. Of these 53 were found to contain arsenic in slight excess of the limit laid down by the Royal Commission on arsenical poisoning—namely, the equivalent of one-hundredth of a grain of arsenious oxide per pound in the case of solids or per gallon in the case of liquids.

Dangerous Drugs Act

Under the provisions of the Dangerous Drugs Act, 1920, the importation or exportation of prepared opium is prohibited. The Act, further, makes it an offence, inter alia, to import or export, without licence, certain drugs (morphine, diamorphine (heroin), cocaine and ecgonine), or preparations containing more than a certain percentage of these drugs. In suspected cases the officers of Customs and Excise sample the goods and the samples are examined; 54 such samples were received, and of these nine were found to contravene the provisions of the Act.

Nine samples of imported colours, lakes, and other goods were examined to ascertain whether they involved liability to Customs duty, and also to ascertain whether they contained synthetic organic dyes, the importation of which, under the Dyestuffs (Import Regulation) Act, 1920, is prohibited except under licence.

The total number of samples examined in regard to the silk duties was 22,179, of which 12,760 were from imports, 9,231 from exports, and 188 from home factories. The subsidy on home-grown beet sugar has necessitated the examination for assessment of duty of a large number of samples of sugar. During the year 3,994 samples of beet-pulp, beet juice, Of home-grown molasses, and refined sugar were received. leaf tobacco, which is being experimentally cultivated in East Anglia and the South of England, 30 samples were

Ministry of Health
In connection with an investigation by the Ministry of
Health into the disposal of domestic refuse and the possibility of its economic utilisation, a number of samples taken at different seasons of the year was examined. The material was separated into various fractions, and determinations, including the calorific value, were made on each of these.

The main provisions of the Public Health (Preservatives, etc., in Food) Regulations came into force on January 1, 1927 The administration of the Regulations within the country is in the hands of the local authorities administering the Food and Drugs Acts, who also, in conjunction with port sanitary authorities, undertake the examination on import of such goods as meat, fish, and fresh fruit as to their conformity with the new requirements. All other imported foods are sampled by officers of the Board of Customs and Excise, the samples being forwarded for examination at the central laboratories or at the Liverpool chemical station.

As many classes of substances are already examined for fiscal purposes, the same samples are used for test for preservatives, so that in the case of a large number of consignments there is no sampling beyond that already in force. During the short period of the operation of the Regulations,

January 1 to March 31, 1,042 samples, including 61 from Scotland, were examined. The variety of articles is very great. The samples included: Fruit in pulped condition for the jam-making industry, and canned, drained, and dried fruit; vegetables in brine, and vegetables canned and dried; sugar, including glucose and molasses; honey; wine, beer, and cider; grape and other fruit juices; syrups and cordials; cocoa, chocolate, and sweetmeats; gelatine; liquid eggs; cereals, biscuits, breakfast and invalid foods; margarine; condensed and dried milk; custard powder and cornflour; colouring matters for use in confectionery; and pickles. Twenty-eight of the samples were reported to the Board of Customs and Excise as contravening the Regulations.

Effect of Preservatives Regulations

It is of interest to note that during the portion of 1926, from April to November, when the preservative regulations were not in force, 77 per cent. of the samples of margarine received for examination under the Food and Drugs Act, 1899, contained boron preservative, whereas this substance has not been found in any of the samples received since the beginning of December.

For the Treasury, some special records were examined for safeguarding against fraud. The recovery of radium from the accumulated stock of disused luminous compass dials and gunsights and other radium materials was continued. During the year a considerable quantity (over 200 mgm. as radium element) has been partially concentrated into usable condition.

Sale of Food and Drugs Acts
When proceedings are taken under the Sale of Food and Drugs Acts, the justices before whom the case is heard must, on the request of either of the parties to the case, send to the Government laboratory for analysis the portion of the sample which has been retained for that purpose. Forty-five samples of food were examined during the year. In 36 cases the results were in agreement, in eight cases in disagreement, and in one case in partial agreement, with those put forward by the prosecution.

The following were the cases in which there was disagreement:-Three samples of butter alleged to contain foreign fat were found to afford no chemical or physical indications of adulteration, and their characteristics were consistent with the samples being genuine butters containing a low proportion of volatile acids; three samples of milk alleged to be deficient in fat contained respectively 3.02, 3.07, and 8.35 per cent. of fat; a sample of baking powder was found to contain 4.8 per cent. of available carbonic acid, which did not support the allegation that it was useless as baking powder; a sample of shredded suet alleged to contain an excess of rice flour contained 15.52 per cent. of dry rice flour and 1.33 per cent. of and a sample of mustard alleged to contain wheat flour and turmeric was found to contain turmeric, but only a trace of wheat

Staff of the Government Chemist's Department

The technical staff of the department consists of:-The Government Chemist; Deputy Government Chemist; 5 superintending chemists; 12 chemists, class I; 26 chemists, class II; and 34 temporary assistant chemists. In addition there are over 100 laboratory assistants, including a number of officers of Customs and Excise seconded to the department for service and training.

Death of Professor Arrhenius

WE regret to announce the death of Professor Svante Arrhenius, at Stockholm, on Saturday, October 1, aged 68. The theory of electrolytic dissociation which he advanced and developed had a far-reaching effect on every phase of chemistry, and lies at the root of many modern ideas regarding the behaviour of dissolved substances, the electrical nature of matter, etc. Professor Arrhenius was born at Wijk, near Upsala, on February 19, 1859, the son of an engineer. At Upsala University he distinguished himself in mathematics, physics, and biology, and studied chemistry under Cleve. He developed



THE LATE PROFESSOR SVANTE ARRHENIUS.

his famous theory of electrolytic dissociation at Stockholm during the years 1881-4, but, as sketched in his thesis for his doctor's degree, it was by no means accepted by his professors. He found supporters, however, in Van 't Hoff and Ostwald, with both of whom he subsequently worked. His classical paper on electrolytic dissociation appeared, together with Van 't Hoff's not less famous paper on the analogy between the gaseous and the dissolved state, in the first volume of the newly founded Zeitschrift für physikalische Chemie in 1887, and the new theory was assailed or supported by scientists all over the world. In 1905 Arrhenius was appointed director of the Nobel Institute for Physical Chemistry in Stockholm, a post which he had held ever since. In 1903 he was awarded the Nobel prize for Physics. The year before he had been awarded the Davy Medal of the Royal Society, of which he became a foreign member in 1910, while he also received the Faraday Medal of the Chemical Society in 1914; and honorary degrees came to him from the universities of Heidelberg. Groningen, Oslo, Oxford, Cambridge, Leipzig, and Birmingham. He was an honorary member of the Chemical and Physical Societies of London and the Royal Institution, and of a great number of other learned societies in Europe and America. Among his published works, in addition to papers published in the scientific journals, were a number of books,

The Gas Industry and Its Future Paper Before the Society of Chemical Industry

THE opening meeting of this session of the London section of the Society of Chemical Industry was held at the Society of Arts, Adelphi, at 8 p.m. on Monday, when the chairman, Mr. W. J. A. Butterfield, M.A., F.I.C. (who is one of the Gas Referees), gave an address on "The Gas Industry: Past, Presentiand Future." Dr. Charles Carpenter was in the chair.

Mr. Butterfield stated that among public utility services, the gas industry, which started in London in 1812, was older than the railways and electricity supply. It operated with less outstanding capital than either of them, yet its receipts were considerably greater than those of electricity under-takings and more than half as much as those of the railways. It was the only public utility service which was fundamentally a chemical industry, and the only one which was not interrupted, more or less generally, by the general strike and the miners' stoppage of last year. It achieved this distinction through its preparedness in the matter of stocks of coal and oil, and its co-partnership schemes.

Efficiency of Service

Official testings were made throughout the troubles of 1926 on over 70 per cent. of the gas supplied in Great Britain, and its average heating value was found to be as high as it should have been in normal times, while as regards a further 20 per cent. the deficiency in heating value in any quarter did not average as much as 5 per cent. Having regard to the cessation of the customary supplies of coal for many months, the gas industry achieved a remarkable record of public service in 1926. Reproductions of record-sheets of continuously operating calorimeters, and summarised results of other official testings (thrown upon the screen) indicated that the "therm' system of charging for gas supplied had tended to reduce the proportion of non-heating constituents in the gas and to promote regularity in its heating value.

Gas from coke-ovens, said Mr. Butterfield, should be more extensively utilised for public gas supplies, but the coke-ovens concerned should be taken over by the gas under-takings, in order that they might not be involved in colliery

labour disputes, thus jeopardising public service.

Gas was being used increasingly for industrial heating; for example, two contiguous works belonging to a single firm, and in reality constituting one premises, consumed over 89 million cubic feet of town's gas in 1926. The service-pipe to one consumer's premises was no less than 14 inches in

Mr. Butterfield was of the opinion that gas supply should be extended more rapidly to rural districts, and electricity generated locally from it where required, or from oil, instead of being carried by overhead high-tension transmission lines, which were a menace to airmen and others. There was irrefutable evidence of a more insistent and general demand for gas than for electricity supply. In Great Britain 8½ million premises had gas supplies, and reckoned on the heat, or potential energy, basis, the increase in the consumption of gas in the years 1922 to 1925 was 21 times the increase in the consumption of electricity. The gas industry, besides being itself one of the oldest and largest chemical industries of the country, was the fountain-head from which the other chemical industries originated.

The Chemist's Place in the Industry

Dr. Charles Carpenter (of the South Metropolitan Gas Co.) said, in moving a vote of thanks, that the gas industry in the past had been run very largely by gas engineers with only partial assistance from chemists, but that order of things was being rapidly changed. One of the reasons why the developments which Mr. Butterfield had mentioned as having taken place in recent years had been delayed had been the want of recognition in the past of the value of the services of the chemist, but that was no longer the case, because the very people who at one time set their minds against such recognition were now realising that it was impossible to carry on a gas undertaking except upon a scientific foundation.

Mr. C. S. Garland, in seconding the vote of thanks, said that he looked forward to the time when the gas industry would deal not only with gas, coke, and smokeless fuel, but also with liquid fuel.

Insurance Against Bad Debts

New Facilities for Exporters under Government Scheme THE latest developments of the Government's Export Credit Guarantee scheme, embodying a larger measure of insurance

than that provided for in the old export credits scheme, were explained to a meeting of trade journalists on Monday by Mr. A. M. Samuel, Parliamentary Secretary of the Depart-

ment of Overseas Trade.

Among the many troubles that the exporter had to face, he said, were difficulties of insuring against bad debts and the question of long credits. The exporter could not afford to carry more than a certain amount of risk with any one agent. The Export Credits Guarantee Department had now introduced a scheme as a result of the recommendations made in 1926 by an expert committee, and which it was hoped would lead to the establishment in this country of a regular commercial business in insurance against bad debts, much in the same way as other forms of insurance were undertaken by companies. The whole aim and object of the scheme, Mr Samuel emphasised, was to help the British exporter, and particularly the smaller concerns, to which end it was possible to cover risks as small as £5. Guarantees were given only in respect of goods wholly or mainly made in the United Kingdom.

What the Scheme Offers

Risks are accepted by the Department, which fixes the premium for each case on its merits, using the valuable information available to the Department of Overseas Trade from British consuls and commercial attachés.

By means of the Government guarantee an exporter can be relieved of the worry of collecting debts due to him abroad, as the Department has special facilities for their recovery. The Department invites direct discussion, but formal application for a guarantee should be made through a bank.

Facilities obtainable may be of an insurance character by which guarantees are given without recourse to the exporter, or of a financial character, by which guarantees are given with full recourse to the exporter, or they may be of an intermediate character. The terms of the contract are simple, the

main points being as follows:

When an exporter has obtained from the Department a guarantee for bills of exchange, should any of the bills be protested for non-payment and be presented to the Department the Department will pay the exporter the agreed percentage of the value of the bills, the exporter undertaking to inform the Department immediately of the dishonour of any bill. The net sum recovered from the purchaser is to be divided between the Department and the exporter in agreed proportions. The exporter may shorten the tenor, or, subject to a reduction of the Department's guarantee, may reduce the amount of any bill without prior consultation with the The exporter agrees that all rights in a dishonoured bill shall be vested with the Department.

In this connection it was stated that the Department can, through consuls or commercial attachés, take proceedings,

not necessarily legal, for the recovery of a debt.

Applications for guarantees are made through a bank, and the bank is informed whether the Government is willing to stand security, and, as Mr. Samuel pointed out, if the Government is willing to stand security, a bank is frequently ready to facilitate business itself. A further important advantage is that a low rate of discount may be obtained. Premiums, of course, vary, but in normal European markets an average premium on a 90-day bill for staple lines would be from 7s. 6d. to 10s. per cent. on the amount of the bill, the Department to bear half the risk.

Inquiries are welcomed, and should be addressed to the Manager, Export Credits Guarantee Department, 31, King Street, London, E.C.2.

Shoe and Leather Fair

A COMPREHENSIVE range of acid colours for leather, synthetic tannin, sulphonated oils, and leather finishes were shown by the Yorkshire Dyeware and Chemical Co., Ltd., at the Shoe and Leather Fair in London this week. What is claimed to be the "world's most soluble nigrosine" was shown by Williams (Hounslow), Ltd., who were also displaying special colours, soluble in nitro cellulose, for "dopes." Aniline colous for leather manufactured by the Ajax Aniline Dye Manufacturing Co. were shown by Pronk Davis and Rusby, Ltd.

British Cyanides: Annual Meeting

Progress of Beetle Products and of Moulding Powders

THE annual general meeting of the British Cyanides Co., Ltd. was held on Wednesday at the Cannon Street Hotel, London

Mr. Kenneth M. Chance (managing director) said that the most important factors in improving the company's revenue position since the commencement of the present year had been the rise in the market price of prussiate of soda and the decreased cost of manufacture owing to the reorganisation of their hours of working. Agreements had been entered into whereby the whole of their output of prussiate of soda and red prussiate of potash had been disposed of until the end of 1928 on terms which should bring in a better revenue from these sources next year. It was upon the cheap manufacture of thiocarbamide that the success of the company must ultimately depend, because, although they had patents which they believed to be master patents, it was impossible to foretell the strength of any patent until it had been attacked and successfully defended; but so long as they were able to make thiocarbamide more cheaply than anyone else, they were independent of patents until some substitute for thiocarbamide in making their water-white resins and translucent moulding powders was found, and from what they knew of the position a substitute was not yet in sight. He was therefore glad to be able to state that during the past six months they had succeeded in placing the manufacture of thiocarbamide upon a very strong economic basis. The thiocarbamide position was therefore sound, and that brought him to the Beetle business.

The Beetle Products

With what they called their decorative process, progress had been disappointingly slow; but the cotton side of the business was in a very interesting stage. Through the good offices of the Bleachers' Association and the courtesy of a firm in Glasgow, they had carried out some successful tests on a com-

mercial scale.

The moulding powder side of the business was developing on lines which were sound and satisfactory. Since April last there had been a steady and regular increase in business. The trade was developing not only in table-ware, but also in commercial articles for use in the electrical, motor, and other trades, and they had a good customer in America, which was developing the latter type of business out there. After negotiations, which had extended over the whole of the present year, they had come to an agreement for the formation of a table-ware moulders' association, which involved the formation of a selling company to handle business where collective selling was advantageous.

With regard to the question of their foreign rights, he had already mentioned that they were selling powder in the U.S.A., and, in addition to that, they were in negotiation with two great firms in that country-one for the sale of mouldings and the other for the operation of their patents in the United States. The firm with whom they were negotiating for the sale of mouldings was Marshall Field and Co., of Chicago, who were extensively advertising the ware. They were also negotiating for the sale of their powders on exclusive terms to one of the

countries on the Continent of Europe.

The Beetle Products Company had made great strides in the sale of their moulding powders, and he did not think he was going too far in saying that they had now established this new industry on lines which should lead to a steady and continuous expansion of business.

In conclusion, he called attention to the points that Marshall Field and Co. were emphasising strongly in their advertisements of Beetle products, these being:—(I) The ware is not unbreakable but is virtually so; (2) It is non-inflammable;
(3) It is a non-conductor of heat; (4) It is light in weight.

The retiring directors were re-elected and the proceedings

then closed.

Exemption of Chemicals from Duty

THE Treasury have made an Order under Section 10 (5) of the Finance Act, 1926, exempting the following articles from Key Industry Duty from October 8, 1927, to March 6, 1928: Didial (Ethyl morphine diallyl barbiturate), Ethylene bromide; lead tetra-ethyl; R. Potassium hydroxide (R. potassium caustic, R. potassium hydrate). The Treasury Order will be published shortly.

"C.A." Queries

We receive so many inquiries from readers as to technical, industrial, and other points, that we have decided to make a selection for publication. In cases where the answers are of general interest, they will be published; in others, the answers will simply be passed on to the inquirers. Readers are invited to supply information on the subjects of the queries :-

81 ("Dioxy").—"We believe that a new preparation has recently been put on the market, called 'Dioxy,' which, apparently, is a solvent for fats, waxes, and dyes. We are unable to obtain the name of the manufacturers, and if you could let us have this information, together with their address, we should be much obliged.'

Subsidence of Mond Nickel Co.'s Old Mine.

SEVERAL hundred yards of the tracks of the Canadian Pacific Railway's main line to the west at Worthington Station, near Sudbury, Ontario, were rendered impassable by the subsidence of the Mond Nickel Co.'s mine on Tuesday

The information at the railway headquarters at Montrea is that no lives have been lost nor injuries received, though the stationmaster escaped just before his office was engulfed. Rumblings had been heard during the past few days, and the occurrence was compared by Sudbury residents to an earthquake. The night shift had just gone off, and the day men, while going down, heard ominous rumblings, and got to the surface immediately. The mine is 1,200 ft. deep, and is one of the oldest of the company's workings, having been in operation for 17 years. It is believed that the collapse started at the 500 ft. level working downward.

Later reports from Sudbury indicate that the Canadian Pacific Railway shops, the workshops, and the engine round house are settling in the huge depression that has been formed. A cavity about 400 ft. square and 1,000 ft. deep has been formed, and the Canadian Pacific Railway station is in grave

danger.

The directors of the Mond Nickel Co., in a statement issued on Wednesday, report that as the Worthington mine was the smallest and one of the company's oldest, the closing of it will in no way jeopardise the company's supplies of ore, nor affect their production of nickel.

London Conference on European Trade

On the invitation of Mr. R. T. Nugent, the director of the Federation of British Industries, a private meeting of the directors of industrial federations in Belgium, Czecho-Slovakia, France, Germany, Holland, Italy, Sweden, and Switzerland was held in London on Monday and Tuesday. The director was held in London on Monday and Tuesday. of the Austrian Federation was prevented at the last moment from attending. The meeting discussed current questions which are occupying the attention of the various European industrial federations and, in particular, the method whereby the industrial federations could co-operate in support of the resolutions of the World Economic Conference and of the Congress of the International Chamber of Commerce.

Vacant Appointments

A Chair of Organic Chemistry, Pure and Applied, in the A Chair of Organic Chemistry, Pure and Applied, in the University of Sydney, New South Wales, £1,100. The Agent-General for New South Wales, Australia House, Strand, London, W.C.2. November 9.

An Assistant Lecturer in Water Supply and Sewerage in the University of Western Australia. £450. The Agent-General for Western Australia, 115, Strand, London, W.C.2.

November 1.

British Celanese Developments

An issue will shortly be made by the British Celanese Co. of new 7½ per cent convertible second mortgage bonds for £2,500,000 at par, holders being given the right to convert the bonds into shares of the company at £8 per share. The new money is required to meet the purchase price of £1,100,000 for the royalty right held by the International Holdings Co., redeem the existing income bonds of £266,000, and with the balance of about £1,000,000 to extend the plant and increase

From Week to Week

Mr. W. P. Dreaper, managing director of Artificial Filaments Syndicate, Ltd., has joined the board of the Rayon Manufacturing Co. (1927), Ltd.

A GROUP OF GERMAN CHEMISTS who made a tour of inspection of the Bradford sewage works were entertained to luncheon on Monday by the Lord Mayor of Bradford.

It is announced in our London markets report that British makers of sodium sulphide have reduced their price by ios, per ton on account of foreign competition.

HOLLOW FILAMENT ARTIFICIAL SILK was the subject of special attention at the Manchester Artificial Silk Exhibition, which was opened to the trade on Monday by Lord Colwyn.

OWING TO ILL-HEALTH, Mr. A. R. Warnes has resigned his seat on the council of the Institution of Chemical Engineers, and Mr. F. A. Greene has been co-opted to fill the vacancy.

Mr. Frederick T. Hatswell, secretary of the Midland section of the Coke Oven Managers' Association and manager of the Mitchell Main Coke and By-Product Works, has been elected a member of the Wombwell Urban District Council.

The annual reception given by the president of the Institution of Chemical Engineers has been fixed for November 2 at the Prince's Galleries, London. This will be Sir Alexander Gibb's first opportunity of meeting members since assuming office.

THE ANCHOR CHINA CLAY CO., LTD., and the Melangoose CHINA CLAY CO., LTD., are no longer registered at Blomfield House, 85, London Wall, London, E.C.2. Future communications should be sent to 17, High Cross Street, St. Austell, Cornwall.

Dr. E. W. Smith, treasurer of the Society of Chemical Industry, has been appointed one of the technical secretaries of the Fuel Conference to be held at the Imperial Institute next year. Dr. Levinstein will represent the Society of Chemical Industry.

Sales of Nitrate of soda under the free selling system up to September 15 total 1,745,327 quintals. It is understood that during the past fortnight substantial sales of this fertiliser have been effected at prices ranging from 16s. 8½d. to 17s. 4d. per metric quintal.

"CHEMISTS AND DIVIDENDS" will be the subject of an address which will be given by Mr. S. M. Gluckstein (a director of J. Lyons and Co., Ltd.) at a meeting of the London Section of the Institute of Chemistry, to be held at 30, Russell Square, on Wednesday, October 19.

The Bureau of Information on Nickel, Ltd., has been established, with offices at 2, Metal Exchange Buildings, Leadenhall Avenue, London, E.C.3. It has the object of collecting, correlating, and placing at the disposal of British industry all information of a technical and practical character with regard to the use of nickel and its alloys. The services of the Bureau will be rendered without charge or condition.

BEET SUGAR News.—Work at the new beet sugar factory at Selby will commence shortly, when 250 hands will be taken on, which number will later be increased to 400. Beet is now being received and the machinery is being run and tested.—The coming European beet crop is estimated at 8,101,000 tons, an increase on last season's tonnage. Holland is the only country for which a decrease in production is forecast.

THE INSTITUTION OF CHEMICAL ENGINEERS is opening its session for 1927-8 with an important lecture, to be delivered by Sir William Bragg, on "Crystallisation." The meeting will be held in the Institution of Civil Engineers, Westminster, on Friday, October 28, the President, Sir Alexander Gibb, taking the chair at 6.30 p.m. There will be no charge for admission, but tickets (to admit two) may be obtained on application to the honorary secretary, Institution of Chemical Engineers, Abbey House, Westminster.

Lectures on the agricultural experiments at Rothamsted, to be delivered by Mr. H. V. Garner, the guide demonstrator, and other members of the staff, may be arranged for during the winter by chambers of agriculture, farmers' clubs, farm workers' associations, and agricultural and horticultural societies, on application to the secretary of the institution. No fee will be charged for the lectures, but associations engaging the lecturers would be expected to pay their expenses and make such arrangements as may be necessary.

University News.—Birmingham: The new biology buildings of the university, which will be opened by the Prime Minister on October 20, provide accommodation for the department of biochemistry and brewing among others. The department occupies a large part of the first floor, and contains a large general laboratory, analytical and research laboratories, professors' and lecturers rooms and laboratories, an admirable microscope room, a balance room, an incubator room, a lecture room, and a library.—University College, Dundee: Dr. R. Walker has been appointed to the lectureship in chemistry vacated by Dr. Nellie Walker on her marriage.—Cambridge: A grant from the research fund has been made to Mr. C. B. Allsopp (physical chemistry).

A scholarship in chemistry and physiological chemistry, tenable for two years, has been endowed at the Royal (Dick) Veterinary College, Edinburgh.

The Dr. Joachim Stern Verlag announce that, as from October 1, the publication of *Continental Metallurgical and Chemical Engineering* will be suspended.

RECENT WILLS INCLUDE:—Mr. G. J. Graae, joint managing director of the English Margarine Works, Ltd., estate in England, £5,063 (net personalty £3,897).

THE GAS WORKS UNDERTAKINGS are among the subjects of preliminary report No. 24 of the Census of Production, 1924, which is published in the *Board of Trade Journal* for October 6.

THE NEW GLOVER-WEST VERTICAL RETORT plant erected at the Leven works of the Buckhaven, Methil and Leven joint municipal gas undertaking was inaugurated last week. The plant has cost over £20,000.

COLONEL SIR EDWARD BROTHERTON, president of the Yorkshire Aeroplane Club, gave a luncheon to a large number of members and guests on Saturday on the occasion of the second annual pageant at Sherburn-in-Elmet.

Dr. A. Hollt, chairman of the Liverpool section of the Society of Chemical Industry, will deliver an address on "Merseyside and Chemical Industries," at a meeting of the section to be held on Friday, October 28, at the University of Liverpool.

Mr. Herbert Skinner, president of the Pharmaceutical Society of Great Britain, and Mr. Thomas Marns returned this week from a visit to the United States and Canada, where they had been studying pharmaceutical legislation and inspecting drug factories.

Professor Pictet, the eminent Swiss organic chemist, who recently attained the age of 70, is to receive a gold medal, together with addresses from various scientific institutes and learned societies, at a meeting which will be held on November 26.

A REPORT FROM SWANSEA states that no information is obtainable in that town concerning the London statement that "the British Metal Corporation is erecting a new refinery at Swansea, where the refining of Norvanda copper, now carried on in the United States, will be done"

A CONFERENCE OF CHEMICAL ENGINEERS is to be held in London on Wednesday, Thursday and Friday, December 7, 8, and 9. On Wednesday there will be a works visit and a paper on "Sub-liquid Combustion"; on Thursday papers on "Refrigeration"; and on Friday papers on "Industrial Lighting" and "Refractories."

"COAL RESEARCH FROM THE POINT OF VIEW OF THE CHEMIST" was the subject of a lecture to the Cardiff Rotary Club last week by Dr. S. Roy Illingworth, who emphasised the necessity of regarding coal as a chemical substance, and not as a political battledore. The position of the coal industry could only be advanced, he said, by coordination between educational institutions and commercial organisations.

At an inquest, in Johannesburg, South Africa, on Thursday, September 29, on Professor Lehfeldt, of the Witwatersrand University, who was found dead in his bedroom, a verdict of death from electrocution was returned. In reply to an application for a verdict of accidental death the coroner said he was not prepared to say that the facts were inconsistent with suicide. In returning an open verdict, he said, it was not possible to return a more favourable one.

Dr. J. V. N. Dorr, vice-president of the American Institute of Chemical Engineers and chairman of the American committee responsible for the arrangements in connection with the visit of the British Institution of Chemical Engineers to the United States next year, reports that the arrangements are now nearly complete, and details of the programme and the cost are expected to be available shortly. The annual meeting for 1928 of the Society of Chemical Industry is to be held in New York, and endeavours are being made for the two gatherings to be so synchronised that members of the visiting British organisations can attend both meetings without being too long absent from this country.

Mr. C. C. Concannon, chief of the Chemical Division, Department of Commerce, Washington (whose visit to London was recently noted in The Chemical Age), has returned from a two months tour of Europe, during which time he had occasion to visit some of the leading chemical works in France, Germany, Spain, England, Switzerland, and Italy. While at Geneva he visited the American representatives to the Economic Conference and explained the attitude of the American chemical industry toward chemical warfare. He was invited to visit the potash mines in Suria, Spain, and is of the opinion that they are making progress in the development of potash. Mr. Concannon finds that Germany is recuperating rapidly from the war period, but that she realises that she has to compete with a well developed chemical industry outside Germany.

Obituary

Professor Svante Arrhenius, in Stockholm, on Saturday. October 1, aged 68. An account of his life and work appears on another page.

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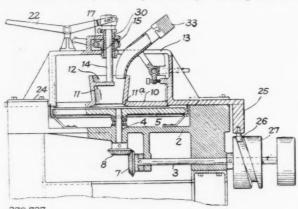
Abstracts of Complete Specifications

276,007. OBTAINING LIGHT HYDROCARBONS FROM ANIMAL OR VEGETABLE OILS BY THE SIMULTANEOUS ACTION OF HEAT, HYDROGEN UNDER PRESSURE, AND A DEHYDRATING CATALYST, PROCESS OF. J-M. F. D. Florentin, 2, Quai du Marché Neuf, Paris, A. J. Kling, 6, Villa George Sand, Paris, and C. Matignon, 7, Boulevard Carnot, Bourg-la-Reine, France. International Convention date, December 17, 1925.

Animal and vegetable oils are treated with hydrogen at a temperature of 350°-480° C. and a pressure of 45 kilograms per square centimetre in the presence of a dehydrating catalyst such as thoria, clay, alumina, and silica, to obtain saturated light hydrocarbons which may be used as fuels or solvents.

276,727-8. DISPERSION OF SOLIDS IN LIQUIDS, PROCESS AND APPARATUS FOR. W. H. Whatmough, 119, Queen Victoria Street, London, E.C.4. Application date, May 29, 1926.

276,727. In the ordinary type of flat grinding mill in which material is fed between two horizontal discs, it is found that some of the material remains undispersed. In this invention, relatively rotating grinding members are employed which have a relative linear motion in addition to rotation, one of the members being wholly or partly lined with flexible or yielding material. The lower disc 5 is mounted on a vertical shaft 4 which is journalled in a frame 2 and is driven by a shaft 3 through bevel gearing 7, 8. The upper disc 10 is provided with a central well 11 and supporting member 12 carrying a shaft 14 which hangs from a movable frame 13. The frame 13 rests on the frame 2 and its extension 25 carries roller 26 engaging with a cam wheel 27 carried by the shaft 3. Guiding members



24 are provided on each side of the frame 13, so that the cam 27 gives it and the upper disc 10 a reciprocating movement. Material to be dispersed is introduced through the pipe 33 into the well 11 and passes through the bevelled portion 11a where it is crushed and then passes between the discs. The clearance of the latter is adjusted by means of worm gearing 17 and a nut 15 working on the sleeve 30. The upper disc can be raised for cleaning by a lever 22. Another apparatus is described in which the linear motion is replaced by arcuate motion.

276,728. This apparatus for the dispersion of solids and liquids employs two flat grinding discs which are independently rotated about fixed axes which are non-coincident. A substantial part of the co-acting faces is in rubbing contact, and the axes of rotation may be changed. Flexible material may be applied to the surface of one of the discs, and the details of construction are described. The irregular paths of contact of the two discs in these inventions prevents the formation of grooves in the discs, which would permit the passage of the material without disintegration.

276,757. Dyeing Artificial Silk, Process for. British Dyestuffs Corporation, Ltd., 70, Spring Gardens, Manchester, J. Baddiley, P. Chorley, and C. Butler, Crumpsall Vale Chemical Works, Blackley, Manchester. Application date, June 7, 1926. Addition to 276,450.

Specification No. 276,450 (see The Chemical Age, Vol. XVII, p. 310) describes the dyeing of regenerated cellulose silk with the secondary disazo dyestuffs obtained by coupling amino salicylic acids or their homologues with the usual middle components, further diazotising and combining with a 1:8-dioxy naphthalene sulphonic acid, or a 1:8-aminonaphthol sulphonic acid, or an N-substituted derivative. It is now found that naphthol sulphonic acids, naphthylamine sulphonic acids and their N-substitution products may also be used as end components. Suitable middle components include α-naphthylamine, 1-amino-2-naphthol ethers, 1-naphthylamine-6- or 7-sulphonic acids, 1-amino-2-alkoxy-naphthalene-6- or 7-sulphonic acids, meta-aminoparacresol methylether, aminohydroquinone-dimethylether, etc. A wide range of colours is obtained according to the end component used.

276,766. BENZANTHRONE DERIVATIVES, MANUFACTURE OF. British Dyestuffs Corporation, Ltd., 70, Spring Gardens, Manchester, J. Baddiley, A. Shepherdson, and S. Thornley, Crumpsall Vale Chemical Works, Blackley, Manchester. Application data, Lync 10, 1036.

Application date, June 19, 1926.

Benzanthrone is directly sulphonated with concentrated sulphuric acid, sulphuric acid monohydrate, or oleum, with or without a catalyst such as mercury to obtain benzanthrone sulphonic acid. Several examples of such sulphonations are given, employing various sulphonating agents, and the products may be fused with caustic alkali to obtain vat dyestuffs which readily form leuco derivatives by the action of alkaline sodium sulphite solution.

276,767. NEW BLACK AND GREY VAT DYESTUFFS. British Dyestuffs Corporation, Ltd., 70, Spring Gardens, Manchester, and S. Thornley, Crumpsall Vale Chemical Works, Blackley, Manchester. Application date, June 19, 1926.

Specification No. 276,766 above describes the production of vat dyestuffs by fusing the products of the direct sulphonation of benzanthrone with caustic alkalies. These dyes are now treated with hydroxylamine or a salt thereof in the presence or absence of ferrous sulphate to obtain vat dyestuffs giving fast black and grey shades. Examples are given.

276,768. VAT DYES, PROCESS FOR THE MANUFACTURE OF. British Dyestuffs Corporation, Ltd., 70, Spring Gardens, Manchester, J. Baddiley, A. Shepherdson, and S. Thornley, Crumpsall Vale Chemical Works, Blackley, Manchester. Application date, June 21, 1926.

The vat dyes obtained according to Specification No. 276,766 above may be converted into dyes of deeper shade and greater fastness by further treatment with alkylating agents or first with oxidising agents and then with alkylating agents. The new dyestuffs give dyeings fast to alkalies and acids. Examples are given of the methylation, which may be preceded by oxidation, of certain of the dyestuffs described in Specification No. 276,766.

Note.—Abstracts of the following specifications which are now accepted, appeared in The Chemical Age when they became open to inspection under the International Convention:—252,745 (H. T. Bucherer), relating to manufacture of dyes, see Vol. XV, p. 164; 257,250 (Red River Refining Co., Inc.), relating to mineral oil distillation, see Vol. XV, p. 433; 260,544 (Newport Co.), relating to 2- or 3-chloro-quinizar 6, see Vol. XVI, p. 29; 267,560 (E. Krebs), relating to 1 certolysing solutions of alkali metal chlorides.

International Specifications not yet Accepted

275,220. DYES. J. R. Geigy Akt. Gen. 37, Riehenring, Basle, Switzerland. International Convention date, July 29, 1926.

An aminosulphobenzoic acid having the sulpho group in the

o-position to the amino group-e.g., 2-chlor-5-amino-4sulpho-benzoic acid, is diazotised and coupled with a coupling component such as \(\beta\)-naphthol. In this example, the product is a red powder giving a calcium or barium lake of more fiery tint and faster to light than Lake red C. Other examples are given. 2-chlor-5-amino-4-sulphobenzoic acid is obtained by oxidising o-chlor-p-toluene sulphonic acid, nitrating the resulting carboxylic acid, and reducing the product.

275,230. Dyes. I.G. Farbenindustrie Akt.-Ges., Frankforton-Main, Germany. International Convention date,

July 29, 1926.

Dyestuffs giving yellow shades on cellulose esters and ethers are made by condensing a nitro- or dinitro-chlorbenzenesulphonic acid with an aminoazo dyestuff, or by condensing a nitro- or dinitro-chlorbenzene with a monosulphonated aminoazo dyestuff.

275,248. DESTRUCTIVE HYDROGENATION. industrie Akt.-Ges., Frankfort-on-Main, Germany. Inter-

national Convention date, July 28, 1926. In the conversion of methyl or ethyl alcohol into higher alcohols, and in the destructive hydrogenation of carbonaceous material, the reaction heat is supplied by the injection of a preheated gas, e.g., hydrogen.

275,258. Dyes and Intermediate Products. I. G. Farbenindustrie Akt. Ges., Frankfort-on-Main, Germany.

International Convention date, July 29, 1926.
Diazo compounds are coupled with aminonaphthol derivatives of the general formula HO-R-NXY, where R is a naphthalene nucleus which may contain sulpho or carboxyl groups, X is hydrogen, alkyl, aryl, or aralkyl, and Y is the residue of a carboxylic acid ester, e.g., -COOC2H5 or -CH2COOC2H5. These bodies are obtained by the action of a halogenated acid ester on an aminonaphthol in the presence of an acid-binding agent. In one example, diazotised p-amino-methyl-acetanilide is coupled with the product obtained by the reaction of chlorformic ethyl ester on the sodium salt of 2:8:6-aminonaphtholsulphonic acid.

275,267. SULPHONATING FATS, ETC. Chemische Fabrik Milch Akt.-Ges., 67, Oranienburgerstrasse, Berlin. Inter-

national Convention date, August 2, 1926.

Fats and fatty acids are sulphonated by chlor-sulphonic acid, and the sulpho-acids may be neutralised without separate purification, their calcium salts being soluble. products are used to convert fats, oils, etc., into emulsions or soluble preparations, which can be used as emulsifying or wetting agents, etc. Examples are given.

275,271. BENZANTHRONE DERIVATIVES. I. G. Farbenindustrie Akt.-Ges., Frankfort-on-Main, Germany. Inter-

national Convention date, August 2, 1926.

A benzanthronyl sulphide, disulphide, mercaptan, or a derivative, or one of the oxidation products described in specification 263,200 (see The Chemical Age, Vol. XVI, 328), is treated with hydroxylamine in sulphuric acid solution, preferably in the presence of ferrous or copper sulphate, to obtain amidated sulphurised benzanthrone derivatives which are dyestuff intermediates. A number of examples are given.

Hydrogen. F. Gülker, Ueckendorferstrasse, Gelsen-275,273. kirchen, Germany. International Convention date, July

Hydrogen is obtained by the action of steam on carbon monoxide or water-gas in the presence of a catalyst and a substance capable of absorbing carbon dioxide, such as lime. The catalyst may be spathic iron ore or bauxite.

275.578-9 and 275.580. TREATING TITANIFEROUS MATE-RIALS. Titan Co. Aktieselskabet, Frederiksstad, Norway. International Convention date, August 3, 1926.

275.578. Ilmenite or titanite is dissolved in sulphuric acid containing ferrous sulphate whereby hydrolysis of the dissolved compounds is prevented. The substance added to the acid may be a solution obtained from another step in the process. The process of solution is conducted at a temperature of 170° C. falling to 130° C.

275,579. The raw material is dissolved in the presence of a reducing agent such as pyrites or the products obtained by heating pyrites with sulphur, iron, titanium compounds, etc., at 700°-800° C.

275,580. In addition to a reducing agent, magnesium,

alkali, or alkaline earth compounds may be added to reduce iron without reducing titanium. The material is then treated with sulphuric acid at such dilution and temperature that only titanium is dissolved. Iron may be recovered from the residue. Alternatively the reduction may be effected with excess of reducing agent in presence of nitrogen to obtain titaniumnitrogen compounds. After solution of the titanium, ammonium sulphate is recovered.

590. Synthetic Drugs. A. Binz and C. Räth, 42, Invalidenstrasse, Berlin. International Convention date, 275,590.

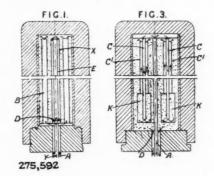
August 5, 1926.

Substituted pyridine arsinic acids containing hydroxyl or halogen groups, e.g., 2-oxy- and 2-halogen-pyridine-5-arsinic acids are treated with fuming nitric acid. The products may be reduced to the amino compounds.

275,592. Ammonia Synthesis. Soc. l'Air Liquide, Anon, pour l'Etude et l'Exploitation des Procédés G. Claude, 48, Rue St. Lazare, Paris. (Assignees of Soc. Chimique de la Grande Paroisse (Azote et Produits Chimiques), 13, Rue des Saussaies, Paris.) International Convention date, August 9, 1926. Addition to 268,722. (See The Chemical Age, Vol. XVI, p. 558.)

The temperature of the catalyst is maintained substan-

tially uniform by conveying heat by the reagents from the hotter to the cooler parts. The reagents enter by the annular passage A and pass through tubes B in contact with the catalyst. The gases then pass through the catalyst to an



opening D in a central tube E, through which they again pass to the hotter end of the chamber and then back through annular tube X to the outlet. In a modification, the tubes are partly filled with catalyst. The gases enter at A, pass to the opposite end, and return through the inner tubes C and catalyst K to the outer tubes C1, and thence to the main body of the catalyst.

275,609 and 275,613. DYES. I. G. Farbenindustrie Akt.-Ges., Frankfort-on-Main, Germany. International Convention dates, August 9, 1926, and August 5, 1926.

275,609. The residue of a 4-alkoxy-diphenylamine is introduced into a triarylmethane dyestuff as one of the aryl groups; thus, 4-methoxy-diphenylamine is condensed with 4:41-tetra-methyl-diamino-benzophenone by means of phosphorus oxychloride, and the resulting dyestuff sulphonated.

275,613. This is an addition to 274,128 (see The Chemical Age, Vol. XVII, p. 261). Similar dyestuffs are made by coupling a diazo compound of a 1:3-dimethyl-4-amino-2halogenbenzene or of a 1:3-dimethyl-6-alkyl-4-amino-2-halogenbenzene with a 2:3-oxynaphthoic arylide. The production of the above-mentioned compounds is also described.

LATEST NOTIFICATIONS.

277,932. Process for the recovery of nitrogen and acetone from vinasses, molasses, and other nitrogenous residues. Nouvelles Industries Chimiques. September 21, 1926. 277,938. Process for the manufacture of carbon dioxide. Haynes, P. E. September 27, 1926.

Refining or fractionating of mineral oils and mineral oil products. Akt.-Ges. für Kohlensaure-Industrie, and Auerbach, Dr. E. B. September 25, 1926.

Manufacture of pigments and pigmented products. Stub-

ner, E. C. De. September 23, 1926.
952. Distillation. International Combustion Engineering Cor-277,952. September 21, 1926. poration.

277,953. Process for the manufacture of a solid alcoholic solution of free iodine. Jungmann, Dr. K., and Kolbert, Dr. O. September 21, 1926.

277,974. Process for hydrogenating and splitting hydrocarbons, the distillation products of various coals and their constituents, also the coals themselves. Spilker, Dr. A. L. H., Zerbe, C., and Ges. für Teerverwertung. September 23, 1926. Process for the distillation of organic calcium salts. Ger-

main, F. September 23, 1926.

Specifications Accepted with Date of Application

Azo-dyes, Production or development of. H. T. herer. March 16, 1926. Lead-tin alloys derived from waste material from lead 249,526. Azo Bucherer.

smelting works, Process for treating. M. Speichert. June 17, 1925.

Dyestuff, Manufacture of. Soc. of Chemical Industry in 256,205. Basle. August 1, 1925. 241. Electrolytic process for the manufacture of magnesium

256.241.

and the alkaline earth metals such as calcium by the electrolysis of molten chlorides and means for carrying the said process into of molten chlorides and means for carrying the said process into effect. A. C. Jessup. July 29, 1925.

256,933. Extracting neutral oils from tar, tar-oil, or pitch, Process of. H. Wittek. August 12, 1925.

259,999. Vat-dyestuffs, Manufacture of stable preparations of. I. G. Farbenindustrie Akt.-Ges. October 17, 1925.

261,422. Anthraquinone nitriles, Manufacture of. I. G. Farbenindustrie Akt.-Ges. November 13, 1925.

industrie Akt.-Ges. November 13, 1925.

61,770. Pyrazolone azo dyestuffs, Manufacture of. I. G. Farbenindustrie Akt.-Ges., November 19, 1925.

265,989. Decomposition of gaseous or vaporous hydrocarbons by means of water vapour. I. G. Farbenindustrie Akt.-Ges. February 11, 1926.

266,684. Acetic acid liquor, Process for treating. des Usines du Rhône. February 26, 1926.

267,518. Iron phosphide and fused cement, Process for the simultaneous manufacture of. W. Kyber. March 10, 1926. 269,199. Phosphatic fertilisers, Manufacture of. Preparation

Industrielle des Combustibles and A. Hoffmann. April 8,

1926.
270,348. Dyestuffs, Manufacture of. Soc. of Chemical Industry in Basle. April 30, 1926. Addition to 199,360.
277,394. Organic compounds, Manufacture and production of. J. Y. Johnson. (I. G. Farbenindustrie Akt.-Ges.) March 13,

1926. 277,398. Dyes and dyeing. B. Wylam, J. E. G. Harris, H. A. E. Drescher, J. Thomas, and Scottish Dyes, Ltd. April 9, 1926.

404. Cracking, catalysing, and hydrogenating carbonaceous materials, Apparatus for. A. E. Bianchi and G. Guardabassi. June 8, 1926

419. Oil and coal, Treatment of—and the production of liquid hydrocarbons therefrom. F. Lamplough and A. E. 277,419. Hodgson. June 15, 1926. 500. Separation of solids from liquids. J. Southall. Sep-

277,500. tember 23, 1926.

High grade silicon iron, Method of producing. V. B. 277,537. Hi Browne.

January 10, 1927

277,586. 2-oxy-4-amino-phenyl-arsinic acid and salts thereof, Manufacture of a new formyl derivative of. Etablissements Poulenc Frères Soc. Anon. and E. Fourneau. October 29, 1926.

Applications for Patents

Anderson, L. J., Cash, W. A., and Stephens, F. G. C. Manufacture

Anderson, L. J., Cash, W. A., and Stephens, F. G. C. Manufacture of titanium-containing compounds. 25,953. October 1.
Beckett, E. G., and Fairweather, D. A. W. Production of benzoic acid, etc. 25,784. September 29.
Caro, N., and Frank, A. R. Production of metal cyanamides, etc. 25,887, 25,888. September 30. (Germany, October 23, 1926.)
Caro, N., and Frank, A. R. Production of calcium cyanamide, etc. 25,899. September 30. (Germany, October 27, 1926.)
Caro, N., and Frank, A. R. Production of calcium cyanamide, etc. 25,890. September 30. (Germany, December 2, 1926.)
Caro, N., and Frank, A. R. Production of fertilisers. 25,891. September 30. (Germany, October 23, 1926.)
Caro, N., and Frank, A. R. Production of fertilisers. 25,892. September 30. (Germany, March 3.)
Caro, N., and Frank, A. R. Production of metal cyanamides, etc. 25,893. September 30. (Germany, October 28, 1926.)

25,893. September 30. (Germany, October 28, 1926.)
Caro, N., and Frank, A. R. Production of metal cyanamides, etc. 25,894. September 30. (Germany, December 2, 1926.)
Carpmael, A., and I. G. Farbenindustrie Akt. Ges. Manufacture of substituted guanidines. 25,413. September 26.

of substituted guanidines. 25,413. September 26.

Carpmael, A., and I. G. Farbenindustrie Akt.-Ges. Protection of stored corn from vermin, etc. 25,414. September 26.

Carpmael, A., and I. G. Farbenindustrie Akt.-Ges. Protecting wool,

etc., from moth. 25,620. September 28. Carpmael, A., and I. G. Farbenindustrie Akt.-Ges. Vat dyestuffs 25,901, 25,902. September 30.

Dreyfus, H. Manufacture of cellulose derivatives. 25,637. September 28

Du Pont de Nemours and Co., E. I. Pigmented carbohydrate compound compositions. 25,390. September 26. (United States, October 5, 1926.)

Hirchberg, L. M. Distillation of coal, etc. 25,456. September 27, Hirchberg, L. M. Distillation of coal, etc. 25,710. September 29, I. G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Production September 29. Production of esters. 25,006. September 22. I. G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Production

of coloured compounds, etc. 25,007. September 22.

I. G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Carrying out exothermic gas reactions. 25,110. September 23.

I. G. Farbenindustrie Akt.-Ges. Process for making dihydroxy-

acetone. September 21. 24,909. (Germany, December 18, 1926.

G. Farbenindustrie Akt.-Ges. Manufacture of mono- or poly-valent alcohols. 25,593. September 28. G. Farbenindustrie Akt.-Ges. Vat dyestuffs. 25,901, 25,902.

September 30. Farbenindustrie Akt.-Ges. Manufacture of condensation

production of urea. 25,475. September 27. (Germany, October 8, 1926.) I. G. Farbenindustrie Akt.-Ges. Extracting clay, etc., with acids.

25,740. September 29. (Germany, September 29, 1926.) Imperial Chemical Industries, Ltd. Cleavage of oils and fats. 25,748.

September 29.

Johnson, J. Y., and I. G. Farbenindustrie Akt.-Ges. Manufacture of liquid hydrocarbons from olefines. 25,592. September 28.

Johnson, J. Y., and I. G. Farbenindustrie Akt.-Ges. Manufacture

of mono- or polyvalent alcohols. 25,593. September 28. Johnson, J. Y., and I. G. Farbenindustrie Akt.-Ges. Production of anti-corrosive lead antimony alloys. 25,730. September

Johnson, J. Y., and I. G. Farbenindustrie Akt.-Ges. Manufacture

of vat dyestuffs. 25,731. September 29. Johnson, J. Y., and I. G. Farbenindustrie Akt.-Ges. Recovery of

hydrogen. 25,732, 25,733. September 29. Kloepfer, H. Production of alkali hydrides. ber 28. 25,586. Septem-Laporte, Ltd., B. (Schlaugk Ges.). Manufacture of sodium sul-

phide, 24,910. September 21. Lucas, O. D. Cracking of liquid hydrocarbons. 24,974. Sep-

tember 22.
Maclaurin, R. Recovering ammonium and phenolic compounds

from ammonia liquors. 25,948. October 1.

Merck, E. [firm of]. Production of a scopolamine preparation.
25,249. September 24. (Austria, October 11, 1926.)

Mitchell, J. Chemical fire-extinguishers. 24,890. September 21.

Oel-und Fett-Chemie Ges. Process for treating tall oil. 25,393. September 26. (Germany, October 11, 1926.)
Salerni, P. M. Distillation retorts, etc. 25,756. September 29.
Schorn, H. Aluminium alloys. 24,661, 24,662. September 19.

(Germany, September 18, 1926.)
Scottish Dyes, Ltd., Thomas, J., and Tonkin, R. Production of anthraquinone derivatives. 25,642. September 28.
Scottish Dyes, Ltd., and Thomas, J. Production of benzoic acid, Production of

etc. 25,784. September 29. Seailles, J. C. Manufacture of alumina. 24,637. September 19.

(France, September 18, 1926.) th, E. Manufacture of cream of tartar substitutes. 25,827. Smith, E.

Smith, E. Manufacture of cream of tartal substances.

September 30.

Stephens, A. J. (Wulfing, R. von). Manufacture of 2-phenyl-quinoline-4-carboxylic acid. 25,158. September 23.

Stubner, E. C. de. Manufacture of coloured cellulose, etc. 25,063.

September 22. (United States, September 23, 1926.)

Suida, H. Recovery of concentrated acetic acid. 25,420. September 26.

tember 26.
Taylor, E. W. Electrodeposition of metals. 25,641. September United Water Softeners, Ltd. Water-softening apparatus. 25,729.

September 29. Vereinigte Chemische Werke Akt.-Ges. Elimination of smell from

glycerine. 25,898. September 30. (Germany, October 11, V. L. Oil Processes, Ltd. Cracking of liquid hydrocarbons. 24,974.

September 22.
Weingand, R., and Wolff and Co. Production of cellulose. 24,776. September 20. (Germany, April 19.)

The Gow Lectures

DR. E. A. HAUSER will deliver the Gow Lectures at University College, London, during the coming term. The lectures (which will be open to the public without fee or ticket) will deal with "The Colloid Chemistry of the Rubber Industry," and will take place at 5.15 p.m. on November 7, 9, 11, 14, 16, and 18. Dr. Phyllis M. Kerridge will deliver three public lectures at the college on "Hydrogen Ion Concentration," at 5 p.m. on October 14, 21, and 28.

Weekly Prices of British Chemical Products

The prices and comments given below respecting British chemical products are based on direct information supplied by the British manufacturers concerned. Unless otherwise qualified, the figures quoted apply to fair quantities, net and naked at makers' works.

General Heavy Chemicals

ACID ACETIC, 40% TECH.—£19 per ton.
ACID BORIC, COMMERCIAL.—Crystal, £34 per ton; powder, £36 per

ACID HYDROCHLORIC.—3s. 9d. to 6s. per carboy d/d, according to

ACID HYDROCHLORIC.—3s. 9d. to 6s. per carboy d/d, according to purity, strength, and locality.

ACID NITRIC, 80° Tw.—421 10s. to £27 per ton, makers' works, according to district and quality.

ACID SULPHURIC.—Average National prices f.o.r. makers' works, with slight variations up and down owing to local considerations: 140° Tw., Crude Acid, 60s. per ton. 168° Tw., Arsenical, £5 10s. per ton. 168° Tw., Non-arsenical, £6 15s. per ton.

AMMONIA ALKALI.—£6 15s. per ton f.o.r. Special terms for contracts.

BISSULPHUR OF LIME.—72 tops per ton f.o.r. Jordon packages extra

BISULPHITE OF LIME.—£7 108. per ton, f.o.r. London, packages extra. BLEACHING POWDER.—Spot, £9 108. per ton d/d; Contract, £8 108. per ton d/d, 4-ton lots.

per ton d/d, 4-ton iots.

BORAX, COMMERCIAL.—Crystals, £19 ios. to £20 per ton; granulated, £19 per ton; powder, £21 per ton. (Packed in 2-cwt. bags, carriage paid any station in Great Britain.)

CALCIUM CHLORIDE (SOLID).—£5 to £5 5s. per ton d/d carr. paid.

COPPER SULPHATE.—£25 to £25 ios. per ton.

METHYLATED SPIRIT 61 O.P.—Industrial, 2s. 5d. to 2s. iod. per gall.; printingied industrial 2s. 5d. to 2s. per gall.; mineralised

pyridinised industrial, 2s. 7d. to 3s. per gall.; mineralised, 3s. 6d. to 3s. 1od. per gall.; 64 O.P., 1d. extra in all cases; prices according to quantity.

NICKEL SULPHATE.—£38 per ton d/d.
NICKEL AMMONIA SULPHATE.—£38 per ton d/d.

POTASH CAUSTIC.—£30 to £33 per ton.
POTASSIUM BICHROMATE.—41d. per lb.
POTASSIUM CHLORATE.—31d. per lb., ex wharf, London, in cwt. kegs. SALAMMONIAC.—£45 to £50 per ton d/d. Chloride of ammonia, £37 to £45 per ton, carr. paid.

SALT CAKE.—£3 15s. to £4 per ton d/d. In bulk.

SODA CAUSTIC, SOLID.—Spot lots delivered, £15 2s. 6d. to £18 per ton, according to strength; 20s. less for contracts.

ton, according to streng.h; 20s. less for contracts.

Soda Crystals.—£5 to £5 5s. per ton, ex railway depots or ports.

Sodium Acetate 97/98%.—£21 per ton,

Sodium Bicarbonate.—£10 10s. per ton, carr. paid.

Sodium Bichromate.—3½d. per lb.

Sodium Bisulphite Powder, 60/62%.—£17 10s. per ton delivered for home market, 1-cwt. drums included; £15 10s. f.o.r. London.

Sodium Chlorate.—2½d. per lb.

Sodium Chlorate.—2½d. per lb.

Sodium Nitrite, 100% Basis.—£27 per ton d/d.

Sodium Phosphate.—£14 per ton, f.o.b. London, casks free.

Sodium Sulphate (Glauber Salts).—£3 12s. 6d. per ton.

Sodium Sulphide Conc. Solid, 60/65.—£13 5s. per ton d/d.

Contract, £13. Carr. paid.

Sodium Sulphide Crystals.—Spot, £8 12s. 6d. per ton d/d.

Contract, £8 10s. Carr. paid.

Contract, 48 10s. Carr. paid.
Sodium Sulphite, Pea Crystals.—£14 per ton f.o.b. London, 1-cwt. kegs included.

Coal Tar Products

ACID CARBOLIC CRYSTALS .- 71d. to 81d. per lb. Crude 60's, 23. 4d.

ACID CARBOLIC CRYSTALS.—7\(\frac{1}{2}\)d. to \$\frac{1}{2}\)d. per 10. Crude 60 8, 28. 4d. to 2s. 5d. per gall.

ACID CRESYLIC 99/100.—2s. 11d. to 3s. per gall. 97/99.—2s. 4d. to 2s. 5d. per gall. Pale, 95%, 2s. 2d. to 2s. 3d. per gall. Dark, 90%, 1s. 9d. to 1s. 10d. per gall.; 95%, 2s. 1d. to 2s. 2d. ANTHRACENE.—A quality, 2\(\frac{1}{2}\)d. to 8\(\frac{1}{2}\)d. to 8\(\frac{1}{2}\)d. to 8\(\frac{1}{2}\)d. per gall. Unstrained, 7\(\frac{3}{4}\)d. to 8\(\frac{1}{2}\)d. to 8\(\frac{1}{2}\)d.

BENZOLE.—Crude 65's, old. to old. per gall., ex works in tank wagons. Standard Motor, is. ild. to is. old. per gall., ex works in tank wagons. Pure, is. 5d. to is. 6d. per gall., ex works in tank wagons.

WORKS in tank wagons.

Toluole.—90%, is. 4d. to is. 8d. per gall. Firm. Pure, is. 6d. to 2s. per gall.

XYLOL.—is. 3d. to is. iod. per gall. Pure, 2s. 5d. per gall.

CREOSOTE.—Cresylic, 20/24%, iod. to iid. per gall.; middle oil, 8d. to 9d. per gall. Heavy, 83d. to 9d. per gall. Standard specification and to add to water. Solver and per gall.

to 9d, per gall. Heavy, 8\(\frac{3}{2}\)d. to 9d. per gall. Standard specification, 7\(\frac{1}{2}\)d. to 7\(\frac{3}{2}\)d. ex works. Salty, 7d. per gall. less 1\(\frac{1}{2}\)\(\frac{6}{2}\).

NAPHTHA.—Crude, 9d. to 10d. per gall. Solvent 90/160, 9\(\frac{1}{2}\)d. to 10d. per gall. Solvent 95/160, 1s. 3d. to 1s. 4d. per gall. Solvent 90/190, 9\(\frac{1}{2}\)d. to 1s. 3d. per gall.

NAPHTHALENE CRUDE.—Drained Creosote Salts, \(\frac{1}{2}\)5 per ton. Whizzed or hot pressed, \(\frac{1}{2}\)8 per ton.

NAPHTHALENE.—Crystals, \(\frac{1}{2}\)1 10s. to \(\frac{1}{2}\)1 10s. per ton. Quiet. Flaked, \(\frac{1}{2}\)1 20s. to \(\frac{1}{2}\)3 per ton, according to districts.

PITCH.—Medium soft, 8\(\frac{1}{2}\)s. to 903, per ton, f.o.b., according to district. Market firm.

PURDING.—00/140, 5s. od. to 6s. 6d. per gall. 90/180, 4s. 6d. to 5s.

Pyriding.—90/140, 5s. 9d. to 6s. 6d. per gall. 90/180, 4s. 6d. to 5s. per gall. Heavy, 4s. to 4s. 6d. per gall.

In the following list of Intermediates delivered prices include packages except where otherwise stated:

packages except where otherwise stated:

ACID AMIDONAPHTHOL DISULPHO (1-8-2-4).—10s. 9d. per lb.
ACID ANTHRANILIC.—6s. per lb. 100%.
ACID BENZOIC.—1s. 9d. per lb.
ACID GAMMA.—4s. 9d. per lb.
ACID H.—3s. per lb.
ACID NAPHTHIONIC.—1s. 6d. per lb.
ACID NEVILLE AND WINTHER.—4s. 9d. per lb.
ACID NEVILLE AND WINTHER.—4s. 9d. per lb.

ACID Naphthionic.—Is. 6d. per lb.
ACID Neville and Winther.—4s. 9d. per lb.
ACID Sulphanilic.—8½d. per lb.
ANILINE OIL.—7½d. per lb. naked at works.
ANILINE SALTS.—7½d. per lb. naked at works.
BENZALDEHYDE.—2s. 3d. per lb.
BENZIDINE BASE.—3s. 3d. per lb. 100% basis d/d.
BENZIDINE BASE.—3s. 3d. per lb. 100% basis d/d.
BENZIDINE BASE.—3s. 3d. per lb.
0-CRESOL 29/31° C.—5½d. per lb.
0-CRESOL 29/31° C.—52. 7½d. per lb.
Only limited inquiry.
DICHORANILINE.—2s. 3d. per lb.
OINITROBENZENE.—9d. per lb. naked at works.

£75 per ton.
DINITROCHLORBENZENE.—£84 per ton d/d.

DINITROBENZENE.—9d. per lb. naked at works. £75 per ton.
DINITROCHLORBENZENE.—£84 per ton d/d.
DINITROCHLORBENZENE.—£85° C. 8d. per lb. naked at works. 66/68° C.
9d. per lb. naked at works.
DIPHENYLAMINE.—2s. rod. per lb. d/d.
a-Naphthol.—2s. per lb. d/d.
B-Naphthol.—1id. to is. per lb. d/d.
a-Naphthylamine.—1s. 3d. per lb.
B-Naphthylamine.—3s. per lb.
O-Nitraniline.—5s. 9d. per lb.
m-Nitraniline.—3s. per lb. d/d.
p-Nitraniline.—1s. 8d. per lb.
Nitrobenzene.—6d. per lb.
Nitrobenzene.—6d. per lb. naked at works.
Nitrobaphthalene.—1s. 3d. per lb.

NITRONAPHTHALENE.

-13. 3d. per lb.

NITRONAPHTHALENE.—18. 3d. per 1b.
R. Salt.—2s. 2d. per 1b.
Sodium Naphthionate.—1s. 8½d. per 1b. 100% basis d/d.

p-Toluidine.—74d. per lb. 100% p-Toluidine.—2s. 2d. per lb. naked at works. m-Xylldine Acetate.—2s. 11d. per lb. 100%. N. W. Acid.—4s. 9d. per lb. 100%.

Wood Distillation Products

ACETATE OF LIME.—Brown, £9 10s. to £10 per ton. Good demand,
Grey, £14 10s. to £15 per ton. Liquor, 9d. per gall.

CHARCOAL.—£6 to £9 per ton, according to grade and locality.

Foreign competition severe.

Foreign competition severe.

IRON Liquor.—13. 3d. per gall. 32° Tw. 1s. per gall. 24° Tw.

RED Liquor.—9d. to 10d. per gall.

Wood Creosote.—1s. 9d. per gall. Unrefined.

Wood Naphtha, Miscible.—3s. 11d. to 4s. 3d. per gall. Solvent,

4s. 3d. per gall. Wood TAR.—£4 to £

Wood Tar.—£4 to £5 per ton.
Brown Sugar of Lead.—£40 158, per ton.

Rubber Chemicals

Antimony Sulphide.—Golden, 64d. to 1s. 54d. per lb., according to quality; Crimson, 1s. 4d. to 1s. 6d. per lb., according to quality.

quanty; Crimson, 18. 4d. to 18. od. per 1b., according to quanty.

Arsenic Sulphide, Vellow.—18. 9d. per 1b.

Barytes.—£3 ios. to £6 i5s. per ton, according to quality.

Cadmium Sulphide.—£20 to £25 per ton, according to quantity.

Carbon Black.—5\(\frac{1}{2}\)d. per 1b., ex wharf.

Carbon Black.—5\(\frac{1}{2}\)d. per 1b., ex wharf.

Carbon Tetrachloride.—£45 to £50 per ton, according to quantity,

drum extra. drums extra.

drums extra.

CHROMIUM OXIDE, GREEN.—1s. 1d. per lb.

DIPHENYLGUANIDINE.—3s. 9d. per lb.

INDIARUBBER SUBSTITUTES, WHITE AND DARK.—5\(\frac{1}{4}\)d. to 6\(\frac{1}{4}\)d. per lb.

LAMP BLACK.—\(\frac{1}{2}\)5 per ton, barrels free.

LEAD HYPOSULPHITE.—9d. per lb.

LITHOPONE, 30%.—\(\frac{1}{2}\)2 10s. per ton.

MINERAL RUBBER "RUBPRON."—\(\frac{1}{2}\)1 12s. 6d. per ton, f.o.r. London.

SULPHUR.—19 to 11 per ton, according to quality.
SULPHUR CHLORIDE.—4d. to 7d. per lb., carboys ex

SULPHUR CHLORIDE.—4d. to 7d. per lb., carboys extra.
SULPHUR PRECIP. B.P.—£47 10s. to £50 per ton.
THIOCARBANIDE.—2s. 6d. to 2s. 9d. per lb. carriage paid.
THIOCARBANILIDE.—2s. 1d. to 2s. 3d. per lb.
VERMILION, PALE OR DEEP.—6s. to 6s. 3d. per lb.

ZINC SULPHIDE.—IS. per lb.

Pharmaceutical and Photographic Chemicals ACID, ACETIC, PURE, 80%.- £39 per ton ex wharf London in glass containers.

ACID, ACETYL SALICYLIC.—2s. 3½d. to 2s. 5d. per lb.
ACID, BENZOIC B.P.—2s. to 3s. 3d. per lb., according to quantity.
Solely ex Gum, 1s. to 1s. 3d. per oz.. according to quantity.

Acid, Boric B.P.—Crystal, 40s. to 43s. per cwt.; powder, 44s. to 47s. per cwt., according to quantity. Carriage paid any station in Great Britain, in ton lots.

ACID, CAMPHORIC .- 198. to 218. per lb

ACID, CITRIC.—15. 6 jd. to 15. 7d. per lb., less 5%.

ACID, GALLIC.—28. 8d. per lb. for pure crystal, in cwt. lots.

ACID. PYROGALLIC, CRYSTALS.—75. 3d. per lb. Resublimed, 8s. 3d.

per lb. ACID, SALICYLIC, B.P. PULV.—IS, 2½d. to IS, 3½d. per lb.; Technical—II2d. to IS, per lb. Good demand.
ACID, TANNIC B.P.—28. 8d. to 28. Iod. per lb.

ACID, TARTARIC.—1s. 34d. to 2s. 10d. per lb.
ACID, TARTARIC.—1s. 34d. per lb., less 5%. Firm market.
AMIDOL.—9s. per lb., d/d.
ACETANILIDE.—1s. 6d. to 1s. 8d. per lb. for quantities.
AMIDOPYRIN —8s 6d per lb.
AMMONIUM BENZOATE.—3s. 3d. to 3s. 6d. per lb., according to quantity.

Ammonium Carbonate B.P.—£37 per ton. Powder, £39 per ton in 5 cwt. casks. Resublimated: is. per lb.

Atropine Sulphate.—91. 6d. per oz.

BARBITONE.—58. 9d. to 68. per lb.
BENZONAPHIHOL.—38. 3d. per lb. spot.
BISMUTH CARBONATE.—95. 9d. to 98. 10d. per lb.

BISMUTH CARBONATE.—9s. 9d. to 9s. 10d. per lb.
BISMUTH CITRATE.—9s. 6d. to 9s. 9d. per lb.
BISMUTH SALICYLATE.—8s. 9d. to 9s. per lb.
BISMUTH SUBNITRATE.—7s. 9d. to 8s. per lb.
BISMUTH NITRATE.—7s. 9d. to 6s. per lb.
BISMUTH OXIDE.—13s. 9d. to 14s. per lb.
BISMUTH SUBCHLORIDE.—11s. 9d. to 12s. per lb.
BISMUTH SUBGALLATE.—7s. 9d. to 8s. per lb. Extra and reduced prices for smaller and larger quantities respectively; Liquor Bismuthi B.P. in W. Qts. 1s. 1d. per lb.; 12 W. Qts. 1s. per lb.; 36 W. Qts. 11 d. per lb.
BORAX B.P.—Crystal, 24s. to 27s. per cwt.; powder, 26s. to 29s. per cwt. according to quantity. Carriage paid any station in Great Britain, in ton lots.

Britain, in ton lots.

Bromides.—Potassium, is. 9½d. to is. 10½d. per lb.; sodium, 2s. to 2s. Id. per lb.; ammonium, 2s. 2d. to 2s. 3d. per lb.; granu-lated, \(\frac{1}{2}\)d. per lb. less; all spot Large quantities at lower rates. CALCIUM LACTATE.—Is. 2\(\frac{1}{2}\)d. to 1s. 4\(\frac{1}{2}\)d. per lb. CAMPHOR.—Refined flowers, 2s. 11d. to 3s. 1d. per lb., according to

quantity; also special contract prices.

CHLORAL HYDRATE.—3s. 2d. to 3s. 4d. per lb.
CHLOROFORM.—2s. 3d. to 2s. 7dd. per lb., according to quantity.
CREOSOTE CARBONATE.—6s. per lb.

ETHERS.—S.G. '730—IS. 14d. to 104d., drums; other gravities at proportionate prices.

FORMALDEHYDE.—£39 per ton, in barrels ex wharf. GUAIACOL CARBONATE.—4s. 9d. to 5s. per lb.

HEXAMINE.—2s. 3d. to 2s. 6d. per lb.

HOMATROPINE HYDROBROMIDE.—3os. per oz.

HYDRASTINE HYDROCHLORIDE.—English make offered at 120s. per oz. HYDROGEN PEROXIDE (12 VOLS.) .- IS. 4d. per gallon, f.o.r. makers' works, naked. Winchesters, 2s. 11d. per gal. B.P., 10 vols., 2s. 3d. per gal. In carboys. Winchesters, 2s. 11d. to 3s. 9d.

per gal.; 20 vols., 4s. 3d. per gal.; Winchesters, 5s. per gal. Special prices for larger quantities. HYDROGUINONE.—2s. 11d. to 2s. 2d. per lb., in cwt. lots.

HYPDROGUINONE.—2s. 11d. to 2s. 2d. per lb., for 28-lb. lots; potassium, 4s. 1d. per lb.; sodium, 4s. per lb.; sodium, 4s. per lb.

IRON AMMONIUM CITRATE.—B.P., 2s. 1d. to 2s. 4d. per lb.

2s. 4d. to 2s. 9d. per lb. U.S.P., 2s. 2d. to 2s. 5d. per lb.

IRON PERCHLORIDE.—208. to 228. per cwt., according to quantity.

MAGNESIUM CARBONATE.—Light commercial, £31 per ton net

MAGNESIUM CARBONATE.—Light commercial, £31 per ton net
MAGNESIUM OXIDE.—Light commercial, £62 ros. per ton, less 2½%;
Heavy Commercial, £21 per ton, less 2½%; in quantity lower;
Heavy Pure, 2s. to 2s. 3d. per lb., in 1 cwt. lots.
MENTHOL.—A.B.R. recrystallised B.P., 17s. 9d. per lb. net: Synthetic detached crystals, 9s. to 12s. 6d. per lb., according to quantity: Liquid (95%), 11s. 3d. per lb.
MERCURIALS B.P.—Up to 1 cwt. lots, Red Oxide, 7s. 6d. to 7s. 7d.
per lb., levig., 7s. to 7s. 1d. per lb.; Corrosive Sublimate, Lump, 5s. od. to 5s. 1od. per lb., Powder, 5s. 2d. to 5s. 3d. per lb.;
White Precipitate, Lump, 5s. 11d. to 6s. per lb., Powder, 6s. to 6s. 1d. per lb., Extra Fine, 6s. 1d. to 6s. 2d. per lb.; Calored White Precipitate, Lump, 5s. 11d. to 6s. per lb., Powder, 6s. to 6s. 1d. per lb., Extra Fine, 6s. 1d. to 6s. 2d. per lb.; Calomel, 6s 4d. to 6s. 5d. per lb.; Yellow Oxide, 6s. 1od. to 6s. 11d. per lb.; Persulph., B.P.C., 6s. 1d. to 6s. 2d. per lb.; Sulph. nig., 5s. 1od. to 5s. 11d. per lb. Special prices for larger quantities.

METHYL SALICYLATE.—1s. 9d. per lb.

METOL.—11s. per lb. British make.

PARAFORMALDEHYDE -- Is. 9d. per lb. for 100% powder

PARALDEHYDE.—is. 4d. per lb Phenacetin.—2s. 6d. to 2s. 9d. per lb

PHENAZONE.—4s. to 4s. 3d. per lb.
PHENOLPHTHALEIN.—6s. 6d. to 6s. 9d. per lb.

POTASSIUM BITARTRATE 99/100% (Cream of Tartar) .- 98s. per cwt less 21%

POTASSIUM CITRATE. -B.P.C., 1911: IS. 8d. to IS. 11d. per lb.; U.S.P.: 1s. 11d. to 2s. 2d. per lb.

Potassium Ferricyanide.—18. 9d. per lb., in cwt. lots

Potassium Iodide.—16s, 8d. to 17s, 2d. per lb. according to quantity.
Potassium Metabisulphite.—6d. per lb., 1-cwt. kegs included, f.o.r. London.

POTASSIUM PERMANGANATE.—B.P. crystals, 6d. per lb., spot.

QUININE SULPHATE.—Is. 8d. to Is. 9d. per oz. bulk in 100 oz. tins.
RESORCIN.—3s. 9d. to 4s. per lb., spot.
SACCHARIN.—55s. per lb.; in quantity lower,
SALOL.—2s. 4d. per lb.

SALOL.—28. 4d. per ID.

SODIUM BENZOATE, B.P.—18. 8d. to 18. 11d. per Ib.

SODIUM CITRATE, B.P.C., 1911.—18. 8d. to 18. 11d. per Ib., B.P.C., 1923—28. to 28. 1d. per Ib. for 1-cwt. lots. U.S.P., 18. 11d. to 28. 2d. per Ib., according to quantity.

SODIUM FERROCYANIDE.—4d. per Ib., carriage paid.

SODIUM HYPOSULPHITE, PHOTOGRAPHIC.—415 58. per ton, d/d consigner's station in 1-cwt. kegs.

consignee's station in 1-cwt. kegs.

Consignee s station in 1-cwt. Regs.

Sodium Nitroprusside.—16s. per lb.

Sodium Potassium Tartrate (Rochelle Salt).—90s. to 95s. per cwt. Crystals, 5s. per cwt. extra.

Sodium Salicylate.—Powder, 1s. 7½d. to 1s. 9d. per lb. Crystal,

18. 84d to 18. 1od. per lb.

Sodium Sulphide, pure recrystallised.—1od. to 18. 2d. per lb.

Sodium Sulphide, anhydrous.—£27 1os. to £28 1os. per ton,

according to quantity. Delivered U.K.

Sulphonal.—6s. 9d. to 7s. per lb.

Tartar Emetic, B.P.—Crystal or powder, 2s. 1d. to 2s. 3d. per lb.

Thymol.—Puriss., 10s. to 10s. 3d. per lb., according to quantity.

Firmer. Natural, 14s. 3d. per lb.

Perfumery Chemicals

ACETOPHENONE.—6s. 6d. per lb. AUBEPINE (EX ANETHOL), 10s. 6 10s. 6d. per lb

AMYL ACETATE.—2s. per lb.

AMYL BUTYRATE.—5s. 3d. per lb.

AMYL SALICYLATE.—3s. per lb.

ANETHOL (M.P. 21/22° C.).—5s. per lb.

BENZYL ACETATE FROM CHLORINE-FREE BENZYL ALCOHOL. per lb.

BENZYL ALCOHOL FREE FROM CHLORINE.—28. per lb BENZALDEHYDE FREE FROM CHLORINE.—28. 6d. per lb

BENZYL BENZOATE.—25. 6d. per lb. CINNAMIC ALDEHYDE NATURAL.—16s. 3d. per lb

COUMARIN. - 98. 9d. per lb.

CITRONELLOL.—138. 9d. per lb.
CITRAL—88. 3d. per lb. •
ETHYL CINNAMATE.—68. 6d. per lb.
ETHYL PHTHALATE.—28. 9d. per lb.

EUGENOL.—8s. per lb.
GERANIOL (PALMAROSA).—18s. 6d. per lb. GERANIOL .- 6s. 6d. to 10s. per lb.

HELIOTROPINE.—48. 9d. per lb. Iso Eugenol.—138. 6d. per lb.

LINALOL.—Ex Bois de Rose, 15s. per lb. Ex Shui Oil, 10s. 6d. per lb. LINALYL ACETATE.—Ex Bois de Rose, 18s. 6d. per lb. Ex Shui Oil, 148. 6d. per lb.

METHYL ANTHRANILATE .- 8s. 6d. per lb METHYL BENZOATE.—4s. per lb.
MUSK KETONE.—35s. per lb.
MUSK XYLOL.—8s. per lb.

NEROLIN.—48. 6d. per lb.
PHENYL ETHYL ACETATE.—128. per lb.
PHENYL ETHYL ALCOHOL.—108. 6d. per lb.

RHODINOL.—32s. 6d. per lb. SAFROL.—1s. 6d. per lb. TERPINEOL.—1s. 8d. per lb. VANILLIN.-17s. 9d, per lb.

Essential Oils

ALMOND OIL .-- 11s. per lb. ANISE OIL.—28. 10d. per lb.
BERGAMOT OIL.—28s. per lb.
BOURBON GERANIUM OIL.—148. 6d. per lb.

Camphor Oil.—75s. per cwt Cananga Oil, Java.—18s. per lb. Cinnamon Oil Leaf.—6d. per oz.

Cassia Oil, 80/85%.—7s. 3d. per lb. Citronella Oil.—Java, is. iod. per lb., c.i.f. U.K. port for shipment over 1928. 1s. 74d. per lb., prompt shipment from Java. Ceylon, pure, 1s. 8d. per lb. CLOVE OIL.—5s. 6d. per lb. CLOVE OIL.—5s. 6d. per lb. EUCALYPTUS OII, AUSTRALIAN.—2s. 3d. per lb. LAVENDER OIL.—Mont Blanc, 38/40%, Esters, 17s. 6d. per lb.

LEMON OIL .- 7s. ed. per lb. LEMON OIL.—75. (d. per lb. LEMONGRASS OIL.—45. 6d. per lb. ORANGE OIL, SWEET.—113. 3d. per lb.

OTTO OF ROSE OIL.—Anatolian, 30s. per oz. Bulgarian, 75s. per oz. Palma Rosa Oil.—9s. 3d. per lb.
PEPPERMINT OIL.—Wayne County, 15s. 9d. per lb.; Japanese,

8s. per lb.

PETITGRAIN OIL.—7s. 6d. per lb. SANDALWOOD OIL.—Mysore, 26s. 6d. per lb.; 90/95%, 16s. 6d. per lb.

London Chemical Market

The following notes on the London Chemical Market are specially supplied to THE CHEMICAL AGE by Messrs. R. W. Greeff & Co., Ltd., and Messrs. Chas. Page & Co., Ltd., and may be accepted as representing these firms' independent and impartial opinions.

London, October 6, 1927.

Business has been much brighter during the past week and the volume of goods passing into consumption is much more satisfactory. Prices generally are very firm. Export inquiry is moderate.

General Chemicals

ACETONE has advanced in price and is quoted £63 per ton for small quantities with slight advantages for larger orders

ACID ACETIC is in good demand, price unchanged at £37 to £38 per ton for 80%

ACID FORMIC is without special feature.

ACID LACTIC.—Unchanged at £40 to £43 per ton for 50% by weight.

ACID OXALIC is in rather better demand, price is very firm at about

£30 per ton.

ALUMINA SULPHATE is unchanged at about £5 per ton for 17 18%.

AMMONIUM CHLORIDE is a weak market, and the tendency remains in buyers' favour. Demand is poor.

The spot price is about

BARIUM CHLORIDE has been in better inquiry. The spot price is about £8 ros. per ton.

COPPER SULPHATE.—Unchanged.

EPSOM SALTS.—Price is quietly steady at about £4 7s. 6d. per ton. FORMALDEHYDE has been in better demand and is quoted £40 per

ton for 40% by volume.

LEAD ACETATE.—Unchanged at £42 10s. for white and £41 10s. for brown.
LEAD NITRATE.—Unchanged.

LIME ACETATE.—Unchanged.

METHYL ACETONE in fair demand at £54 to £55 per ton. Potassium Chlorate is quietly steady at £30 per ton.

POTASSIUM PERMANGANATE is in slow demand at 61d. to 61d. per lb. for B.P. grade.

POTAGSIUM PRUSSIATE.—Unchanged at £60 to £62 per ton.

SODIUM ACETATE is rather firmer in price at £18 10s. per ton for spot delivery

SODA BICHROMATE.—Unchanged at 34d. per lb.
SODA CHLORATE is in good demand at about £25 per ton for spot delivery.

SODA HYPOSULPHITE.—Unchanged.

Soda Nitrite is a quiet market at £19 10s. per ton.
Soda Phosphate is very firm, at 4½d. to 4½d. per lb.
Soda Sulphide.—British makers have reduced their price by 10s. per ton on account of foreign competition. ZINC SULPHIDE.—Unchanged.

Coal Tar Products

The report for coal tar products is practically unchanged, as the market is still very quiet.

90's Benzol is still unchanged, and is quoted about 1s. 4d. to 1s. 5d; per gallon, on rails, and the motor quality is quoted at 1s. 1 dd. to is. 21d. per gallon.

Pure Benzol is unchanged, and is quoted at 1s. 71d. to 1s. 81d. per

gallon, on rails,

CREOSOTE OIL is firm, being quoted in the North at 7½d. per gallon on rails, while the price in London is about 8½d. per gallon.

CRESYLIC ACID is worth about 2s. 2d. per gallon, ex works, for the pale quality, 97/99%, and the dark quality, 95/97%, is worth about 1s. 11d per gallon. about is. iid. per gallon.

Solvent Naphtha still weak, and the price is about iod. per gallon.

on rails.

on rails.

Heavy Naphtha is quoted at about 11d. per gallon, on rails.

Naphthalenes.—The prices remain steady at about £6 15s. to £7 per ton for the 74/76 quality, and about £8 to £8 15s. per ton for the 76/78 quality.

Pitch is unchanged, the demand is satisfactory and the production remains at a limited basis. To-day's basis is approximately 90s., f.o.b. U.K. ports.

Latest Oil Prices

London.—October 5.—Linseed Oil quiet and occasionally 2s. 6d. per ton lower. Spot, ex mill, £30 15s.; October to December, £29 15s.; January-April, £30 7s. 6d.; May-August, £30 15s. Rape Oil steady. Crude, extracted, £43; technical refined, £45, naked, ex wharf. Cotton Oil steady. Refined common edible, £42; Egyptian, crude, £36; deodorised, £44. Turrentine inactive and 6d. to 3d. per cwt. lower. American, spot, 37s. 6d.; October-December, 38s. 6d.; January-April, 40s.

October-December, 38s. 6d.; January-April, 40s.

HULL.—OCTOBER 5.—LINSEED OIL.—Spot to December, £30 15s.; January-April, £20 17s. 6d. per ton, naked. Cotton OIL.—Bombay crude, £34 10s.; Egyptian crude, £35; edible refined, £39; technical, £38 is deodorised, £41 per ton, naked. PALM KERNEL OIL.—Crushed, 5½ per cent., £38 10s. per ton, naked. GROUNDNUT OIL.—Crushed-extracted, £34 5s.; deodorised, £42; deodorised, £46 per ton. Sova OIL.—Extracted and crushed, £34 5s.; deodorised, £37 15s. per ton. RAPE OIL.—Crude-extracted, £43; refined, £45 per ton. Castor OIL.—Pharmaceutical, 53s.; first, 48s.; second, 46s. per cwt., barrels, net cash terms, ex mill. Cod OIL unchanged.

Nitrogen Products

Export.—During the past week the sulphate of ammonia market has remained firm. Producers continue to sell on the basis of fo 8s. per ton, f.o.b. U.K. port in single bags, with higher prices for smaller quantities. It is reported that the continental demand has slackened a little. The demand continues strong from the Far East and the sugar growing colonies.

Home.—The home market continues featureless. larger merchants are booking their spring requirements. A number of works are kept busy delivering contracts made with fertiliser manufacturers

Nitrate of Soda.—The nitrate market has improved considerably. On account of an exceptionally large demand from American cotton growers and large buying for other countries, the price has advanced to from 16s. 10 dd. to 17s. 6d. per metric quintal for prompt ship-ment and continues on this level for shipments up to June. The total sales by producers since July 1 are now estimated at 1,975,000 tons, which is several hundred thousand tons above the total sales for the whole year 1926/7. It is reported that further oficinas will be opening shortly and production is expected to advance up to 230,000 tons monthly. The improved outlook of nitrate of soda has been reflected by a considerable advance in share values.

South Wales By-Products

THERE is slightly more activity in the South Wales by-product market. Crude naphthalene is in steady demand, with prices ranging from £5 ios. to £6 ios. delivered. Creosote is unaltered and the demand is not satisfactory. There has been a small increase in the demand for solvent and heavy naphtha, but buyers are anticipating a fall in price and are consequently confining their purchases to immediate demands. Speculation in pitch continues, but it is small and prices are steadier. Patent fuel exports remain satisfactory and the inquiry is good.

A Conference on Engineering Materials

A CONFERENCE on engineering materials is to take place in Berlin from October 22 to November 13. The sponsors of this conference are the German scientific engineering associations, which are supported by various German industrial organisations and the exhibitions, fairs, and foreign visitors office of the city of Berlin. The programme of papers contains about 200 lectures to be read by scientists and practical engineers. Foreign scientists will take part, especially in the lectures to be held on October 31. While the papers (which will be read at the Technical University of Charlottenburg) are intended chiefly for engineers, an exhibition of engineering materials will be an attraction for the general This exhibition will not bear the character of a public also. common trades fair, but will be arranged according to scientific principles. There will be seen the most up-to-date methods of material testing, demonstrations of the properties of different engineering materials, and of the methods of employing and working them. Three groups of engineering materials will be dealt with, namely: iron and steel, non-ferrous metals and electrical insulation materials. Among the subjects of the lectures (many of which deal with separate metals such as aluminium, etc., and are of chemical interest) will be iron and steel and non-ferrous metals for the chemical industry.

THE FIFTIETH ANNIVERSARY of the formation of the Verein zur Wahrung der Interessen der Chemischen Industrie Deutschlands E.V. occurs this year, and will be celebrated at the annual meeting which will take place at Frankfurt on November 11 and 12.

Scottish Chemical Market

The following notes on the Scottish Chemical Market are specially supplied to THE CHEMICAL AGE by Messrs. Charles Tennant and Co., Ltd., Glasgow, and may be accepted as representing the firm's independent and impartial opinions.

Glasgow, October 5, 1927

Business in the heavy chemical market continues moderately good and during the past week inquiry for export has been larger than for some little time. There are no changes in prices of any importance to record.

Industrial Chemicals

ACID ACETIC.—98/100%, £65 to £67 per ton, according to quality and packing, c.i.f. U.K. ports; 80% pure, £37 10s. per ton, ex wharf; 80% technical, £37 10s. per ton, ex wharf.

ACID BORIC.—Crystal, granulated or small flakes, D Boric.—Crystal, granulated or small flakes, £34 per ton. Powder, £36 per ton packed in bags, carriage paid U.K. stations. ACID CARBOLIC, ICE CRYSTALS .- Still in good demand and quoted

price unchanged at about 8 d. per lb., f.o.b. U.K. ports. ACID CITRIC, B.P. CRYSTALS.—Quoted price unchanged at 1s. 6d. to 1s. 6dd. per lb., less 5%, ex store. Continental now offered at 1s. 6dd. per lb., less 5%, ex wharf.

ACID HYDROCHLORIC.—Usual steady demand. Arsenical quality, 4s. od. per carboy. Dearsenicated quality, 6s. 3d. per carboy, ex works.

ACID NITRIC, 800 .- Quoted £23 5s. per ton, ex station, full truck

ACID OXALIC -- Continental material unchanged at 32d. per lb...

ex wharf, spot material quoted 3 d. per lb., ex store.

D SULPHURIC, 144°.—£3 12s. 6d. per ton; 168°, £7 per ton, ex works, full truck loads. Dearsenicated quality, 20s. per ACID SUI PHURIC

ACID TARTARIC, B.P. CRYSTALS.—In little demains who provided in the control of th

offered at 19 per ton, ex store.

Ammonia Anhydrous.—Unchanged at about 9d. per lb., carriage

Containers extra and returnable.

Ammonia Carbonate.—Lump, £37 per ton: powdered, £39 per ton packed in 5 cwt. casks, delivered or f.o.b. U.K. ports.

Ammonia Liquid, 880°.—Unchanged at about 2½d. to 3d. per lb.,

delivered according to quantity.

delivered according to quantity.

Ammonia Muriate.—Grey galvanisers' crystals of English manufacture unchanged at £23 to £24 per ton, ex station. Continental about £19 ios. per ton, c.i.f. U.K. ports. Fine white crystals of continental manufacture now rather dearer at

£17 10s. per ton, c.i.f. U.K. ports.

Arsenic, White Powdered.—Spot material unchanged at about £21 5s. per ton, ex store. Quoted £20 7s. 6d. per ton, ex wharf,

prompt despatch from mines.

BARIUM CARBONATE, 98/100%.— -Continental material unchanged

BARIUM CARBONATE, 98/100%.—Continental material unchanged at about £7 10s. per ton, c.i.f. U.K. ports.

BARIUM CHLORIDE, 98/100%.—Large white crystals quoted £6 17s. 6d. per ton, c.i.f. U.K. ports.

BLEACHING POWDER.—Contract price to consumers, £8 per ton, ex station, minimum 4-ton lots. Spot material, tos. per ton extra. Continental on offer at £7 5s. per ton, ex wharf.

BORAX.—Granulated, £19 10s. per ton; crystals, £20 per ton; powder, £21 per ton carriage paid, U.K. ports.

CALCIUM CHLORIDE.—English manufacturers' price unchanged at £5 to £5 5s. per ton, ex store with a slight reduction for contracts. Continental rather dearer at £3 15s. per ton, c.i.f. U.K. ports.

COPPERAS, GREEN.—Unchanged at about £3 10s. per ton, f.o.r. works or £4 12s. 6d. per ton, f.o.b. ports, for export.

COPPER SULPHATE.—British material now offered \$\frac{1}{23}\$ 15s. per ton, ex store, spot delivery. Continental quoted \$\frac{1}{22}\$ 10s. per ton, ex wharf

FORMALDEHYDE, 40%.—Unchanged at £38 per ton, c.i.f. U.K. ports.

Spot material quoted £39 5s. per ton, ex store.

GLAUBER SALTS.—English material unchanged at £4 per ton, ex store or station. Continental quoted £2 15s. per ton, c.i.f. U.K. ports.

LEAD, RED.—Continental material still cheaper at about £29 5s. per ton, ex store

Lead, White.—Quoted £30 per ton, ex store.

Lead Acetate.—White crystals on offer from the Continent at £40 per ton, c.i.f. U.K. ports; brown about £38 15s. per ton, c.i.f. U.K. ports. Spot material on offer at £43 5s. per ton, ex store.

Magnesite, Ground Calcined.—Quoted £8 ios. per ton, ex store, in moderate demand.

POTASH CAUSTIC 88/92%. - Solid quality quoted £28 15s. per ton c.i.f. U.K. ports, minimum 15-ton lots. Under 15-ton lots, £29 10s. per ton. Liquid, £15 per ton, minimum 15-ton lots. Under 15-ton lots, £15 7s. 6d. per ton, c.i.f. U.K. ports.

POTASSIUM BICHROMATE.—Unchanged at 4\frac{1}{2}d. per lb., delivered.

Potassium Carbonate, 96/98°,... Unchanged at £27 5s. per ton, ex wharf, prompt shipment. Spot material quoted £28 1os. per ton, ex store. 80/85° per ton, c.i.f. U.K. ports. 80/85% calcined quality on offer at £20 10s.

Potassium Chlorate.—Rather higher. Powdered quality now offered at £23 ios. per ton, c.i.f. U.K. ports. Crystals, 30s. Powdered quality now per ton extra.

POTASSIUM NITRATE. - Quoted £20 per ton, c.i.f. U.K. ports. Spot material available at £21 per ton, ex store.

Potassium Permanganate, B.P. Crystals.—Quoted 61d. per lb., ex store, spot delivery.

POTASSIUM PRUSSIATE (YELLOW).—Unchanged at about 61d. per lb. ex store, spot delivery. Offered from the Continent at 6 d. per lb., ex wharf.

Soda Caustic.—Powdered, 98/99°, £19 7s. 6d. per ton; 76′77°, £15 10s. per ton; 70′72°, £14 10s. per ton, carriage paid station. Minimum 4-ton lots on contract. Spot material ios, per ton extra.

SODIUM ACETATE.—English material now quoted £21 per ton, ex store. Continental on offer at £17 5s. per ton, c.i.f. U.K. ports.

SODIUM BICARBONATE.—Refined recrystallised quality £10 10s. per ton, ex quay or station. M.W. quality, 30s. per ton less Sodium Bichromate. -Quoted 31d. per lb., delivered buyers' works.

Sodium Carbonate (Soda Crystals).—£5 to £5 5s. per ton, ex quay or station; powdered or pea quality, £1 7s. 6d. per ton; alkali, 58%, £8 12s. 3d. per ton, ex quay or station.

SODIUM HYPOSULPHITE.—Large crystals of English manufacture quoted £9 10s. per ton, ex store. Minimum 4-ton lots. Continental on offer at about £8 2s. 6d. per ton, ex wharf, prompt shipment. Pea crystals of British manufacture quoted £15 5s. per ton, ex station 4-ton lots.

SODIUM NITRITE, 100° .-Ouoted fig ios, per ton, ex store.

SODIUM PRUSSIATE (YELLOW) .- In moderate demand and price unchanged at about 4\frac{1}{4}\text{d. per lb., ex store.} Offered for prompt shipment from the Continent at 4\frac{1}{4}\text{d. per lb., ex wharf.}

SODIUM SULPHATE (SALTCAKE).—Price for home consumption £3 7s. 6d. per ton, ex works.

SODIUM SULPHIDE.—Prices for English material as follows: 1CM SULPHIDE.—Prices for English material as follows:—
60 (62%, solid, now £10 10s. per ton; broken, £11 10s. per ton; flake, £13 5s. per ton; crystals, 31/34%, £7 10s. per ton to £8 5s. per ton, according to quality, delivered your works, minimum 4-ton lots on contract. Prices for spot delivery 5s. per ton higher for solid, 2s. 6d. per ton for crystals. Offered from the Continent at about £9 5s. per ton, c.i.f. U.K. ports. Broken, 1ss. per ton extra. Broken, 15s. per ton extra.

SULPHUR.—Flowers, £12 per ton; roll, £10 15s. per ton; rock, £10 12s. 6d. per ton; floristella, £9 10s. per ton; ground American, £9 5s. per ton, ex store. Prices nominal.

ZINC CHLORIDE.—British material, 98/100%, quoted £24 15s. per ton, f.o.b. U.K. ports; 98/100%, solid on offer from the Continent at about £21 15s. per ton, c.i.f. U.K. ports. Powdered, 20s, per ton extra.

ZINC SULPHATE.—Continental material quoted [11 158, per ton ex wharf

Note.—The above prices are for bulk business and are not to be taken as applicable to small parcels.

Annual General Meeting of Harbens

PRESIDING at the annual meeting of Harbens (Viscose Manufacturers), Ltd., last week, Sir Charles Mandleburg said he was confirmed in the view that artificial silk was making extra-ordinary headway. "There is," he went on, "evidence on all hands that the demand for the yarn exceeds the immediate supply, and my own belief is that the increased production which may be expected will not keep pace with the steadilygrowing call for artificial silk goods for wearing apparel and other purposes."

The world was awake to the fact that a material formed of artificial silk and cotton or wool in combination was now available, which was not only inexpensive and serviceable, and adaptable to manifold uses, but was also capable of beautiful effects to meet the new needs, and an ever-increasing supply of artificial yarn became a prime necessity.

Manchester Chemical Market

(FROM OUR OWN CORRESPONDENT.)

Manchester, October 6, 1927.

Buyers on the Manchester chemical market continue to operate with rather more freedom than they have been in the habit of doing for some time previous to the last few weeks, all events, home trade users taking somewhat larger parcels for prompt and early deliveries, whilst interest in forward commitments is growing as the end of the year draws nearer and the necessity for arranging supplies over next year approaches. So far as export demand is concerned bookings on this market have been rather slow.

Heavy Chemicals

A moderate demand is passing in the case of phosphate of soda and values are steady, round £12 15s. per ton now being asked. Glauber salts, however, are quiet and rather easy at £3 5s. per ton, with saltcake moving off in fair quantities at £3 10s. Inquiry for alkali is maintained at about its recent level, and prices are firm at £6 15s. per ton. conditions obtained in respect of caustic soda, offers of which range from £14 10s. to £16 10s. per ton, according to quality. Sulphide of soda continues to show indications of easiness, and buying interest in this material remains slow; offers of the 60-65 per cent. concentrated solid quality are at about £10 5s. per ton, whilst the commercial grade is currently quoted at £8 5s. to £8 10s. A quietly steady business is being put through in bicarbonate of soda, and values to home users are steady and unchanged at £10 10s. per ton. A fair trade is reported in the case of bichromate of soda, quotations for which are round 3d. per lb. Chlorate of soda is about unchanged on the week at 23d. per lb., and the demand is quiet. Hyposulphite of soda is fairly steady, although there is not a great deal of business stirring; offers of photographic quality are in the neighbourhood of £16 10s. per ton, whilst commercial is still quoted at £9 15s. There is a moderate call for nitrite of soda, and values are maintained at about £19 per ton. A quietly steady demand for prussiate of soda has been met with, and prices are steady at from $4\frac{1}{4}d$. to $4\frac{3}{8}d$. per lb.

Permanganate of potash seems to be easing off a little, and not much buying interest is being shown; B.P. quality is offered at about $6\frac{1}{2}$ d. per lb. and commercial at $5\frac{1}{8}$ d. Bichromate of potash is about unchanged in value at $4\frac{1}{8}$ d. per lb., and the demand is on a moderate scale. There is a quiet demand about for carbonate of potash, and at £26 Ios. to £26 I5s. per ton no further change in prices has occurred. Caustic potash meets with a fair inquiry, and offers are firm at from £30 to £31 per ton. If anything, chlorate of potash is easier at $2\frac{3}{8}$ d. to $2\frac{7}{8}$ d. per lb., and only a quiet trade is being done. Yellow prussiate of potash is attracting a fair amount of attention, and prices

are rather steadier at 65d. per lb.

Short supplies for prompt delivery and a fairly brisk demand have between them served further to strengthen the position of arsenic, and up to £18 10s. per ton at the mines has been quoted during the past week for white powdered, Cornish makes. Current offers of sulphate of copper are at round £24 10s. per ton, and a moderate business in this material has been done. Acetate of lead is quiet and weak, with white quality quoted at £41 10s. per ton and brown at £39. Nitrate of lead is also a slow seller and is on offer at £37 10s. to £38 per ton. Acetate of lime is very firm on continued scarcity, and from £16 5s. to £16 10s. per ton is being quoted for grey and £9 15s. for

Acids and Tar Products

Tartaric acid has fallen back a little, the demand being slow and prices easy at 1s. $2\frac{3}{4}$ d. to 1s. 3d. per lb. Acetic acid continues to move off in fair quantities, with the commercial 8o per cent. quality steady at £36 to £37 per ton, and glacial at about £67. Citric acid is quiet and has an easy tendency at about 1s. $6\frac{3}{8}$ d. per lb. Oxalic acid, however, continues to be quoted here at up to $3\frac{1}{4}$ d. per lb., and a moderate demand has been reported.

Actual business in pitch has not been very active this week and values now range from £4 to £4 5s. per ton f.o.b. The demand for carbolic acid is rather slow, with crystals quoted at about $7\frac{3}{4}$ d. to 8d. per lb., and crude material at 2s. 4d. per gallon. Creosote oil is still a very steady section of the market at $7\frac{5}{8}$ d. per gallon and there is a fair inquiry about. Solvent naphtha remains easy at about 11½d. per gallon, and the demand is slow.

Rothamsted Station Demonstration

Work on Sugar-beet Effluents, Insecticides, etc.

The annual demonstration of the Rothamsted Experimental Station took place on Thursday, September 29. Among the investigations in progress in the chemistry department are those dealing with nitrogen and carbon cycles; green manuring, chemical processes in the soil, soil reaction, phosphatic fertilisers, superphosphate, nitrogenous fertilisers, potassic fertilisers, barley, and sugar beet. In the fermentation department, in conjunction with the chemistry and microbiology departments, important work is being undertaken with regard to the purification of the effluents from sugar beet factories that are seriously polluting the rivers in many parts of the country. It is hoped as a result of experiments to produce a satisfactory laboratory filter at an early date.

The practice of partially sterilising soil by steam or antiseptics, advocated as a result of investigations at Rothamsted some years ago, is now extensively used. Unfortunately, steaming is costly and the carbolic acid treatment, while cheaper, is rarely as effective. Search has, therefore, been made for more potent chemicals. A heavy oil produced as a by-product from the Mond Gas process gives good results, but is not easy to apply, and persists long in the soil. Dinitrochlorbenzene and 3:5-dinitro-o-cresol have also been tried. The former was more effective than carbolic acid even when used in only one-seventh the amount of the former.

In the insecticide and fungicide department a close study, with promising results, is being made of the insecticidal action of plant extracts and synthetic organic compounds both upon adult insects and their eggs. The purposes of the investigation are to attempt to correlate chemical constitution and physical properties with toxic action on plant pests and disease organisms, and to find suitable compounds for use both as summer and winter washes. A large number of chemical substances are therefore being tested in the laboratory by means of a spraying machine devised to give quantitative comparisons of their contact insecticidal action. The most potent of the compounds are selected for trial in the field. Although the work was begun only comparatively recently, it has had important practical results. A promising winter wash has been found in 3-5-dinitro-ortho-cresol. Pyrethrum is also being studied, and certain results are being obtained which suggest that not only can it be commercially produced and satisfactorily harvested in this country, but that it can be added to the list of effective agents against noxious insects.

The Mutochrome

An Instrument for Producing Colour Designs

An instrument known as the "Mutochrome," which received the Royal Photographic Society's Medal in 1924, has been put on the market by Adam Hilger, Ltd., of 24, Rochester Place, London. The importance of the "Mutochrome" in the evolution of colour schemes is that the design is projected on a screen and may be viewed simultaneously by a number of observers; that each element of a design may be coloured independently; and that the brightness of each element of the design may be altered independently. These features enable the operator to make variations in the colour composition of a design which would otherwise entail many hours of work on the part of the artist or workman. Thus in the case of a wallpaper design consisting of yellow flowers, light green leaves, and a grey background, it is possible in a few seconds to try the effect of, for example, red flowers, dark green leaves, and a brown background, and then to proceed to the infinite number of variations made possible by the alteration of brightness of each of these colours.

The principle of the instrument is as follows: The various

The principle of the instrument is as follows: The various elements of a pattern are photographed separately in such a way that they may be projected in combination, under such conditions that each element is entirely under control as regards colour and brightness. The instrument contains a number of similar optical systems, each of which consists of a lens performing the functions of photography and projection, a condensing lens, and a prism. Colour screens are inserted in front of the iris diaphragm, and a photographic plate or negative together with a light source are common to all the

systems.

Company News

Major and Co.—It is announced that the payment of interim dividends due for the half-year ended September 30 has been postponed.

Francois Cementation Co.—At a meeting of shareholders to be held on October 14 resolutions will be submitted authorising an issue of 300,000 new ordinary shares of 1s. each at a premium of 5s. per share.

BORAX CONSOLIDATED, LTD.—A dividend has been declared at the rate of 6 per cent. per annum, less income-tax at 4s. in the £, on the preferred ordinary shares in respect of the half-year ended September 30, 1927.

Antofagasta (Chili) and Bolivia Railway Co., Ltd.—The board have resolved to pay an interim dividend of 3 per cent. (less income-tax at 4s. in the £) on the consolidated ordinary stock on account of the year 1927, to be paid on November 1.

NITRATE RAILWAYS CO., LTD.—At a meeting of the directors, held on Tuesday, it was resolved that an interim dividend at the rate of 1½ per cent., i.e., 3s. per share (less income-tax), be declared, payable on November 7, upon the ordinary (unconverted) and the preference converted ordinary shares.

Associated Dyers and Cleaners.—The directors have declared an interim dividend of 8d. per share, less tax, on the ordinary shares, payable on October 31. The dividend on the 6½ per cent. cumulative preference shares, covering the four months to October 31, will also be paid on that date. Thereafter the preference dividend will be payable half-yearly on April 30 and October 31.

British Portland Cement Manufacturers, Ltd.—The directors have declared an interim dividend on the ordinary shares of 5 per cent. actual, less tax, payable October 14, in respect of the year ending December 31, 1927, to holders on the register on October 3, 1927. This interim is unchanged from last year, when there was a final of 7½ per cent., making a total of 12½ per cent., against 15 per cent. for the preceding twelve months. In April last 280,000 new ordinary shares were offered to shareholders in the proportion of one in five, ranking pari passu in all respects with the existing ordinary shares

Cerebos, Ltd.—It is announced that the directors propose to recommend, at a meeting to be held next week, that the capital of the company be increased to £600,000 by the creation of 130,000 ordinary shares of £1 each and the creation of 170,000 new shares of £1 each. It is further proposed that £100,000 of the reserve be capitalised, one new ordinary share being distributed for every three ordinary shares held. With regard to the balance of the new ordinary shares, 30,000, a resolution will be submitted entitling the directors to apply for these at par. It is not yet announced for what purpose the other 170,000 new shares are to be created.

Bell's United Asbestos Co., Ltd.—The directors have declared an interim dividend on the old ordinary shares Nos. I to 140,000 and Nos. 200,001 to 353,532 of 1s. per share, being 5 per cent. (actual), less income-tax, on account of the current year. The dividend will be paid on October 17 to shareholders on the register on October 3, and the ordinary share transfer books will be closed from October 4 to October 15, both dates inclusive. The directors desire to point out that in raising the interim dividend from 2½ per cent. to 5 per cent., they are merely reverting to their practice prior to 1921, and that this does not indicate that an increased total dividend for the year will be paid.

Dr. T. A. Henry on the Need for Research

The 36th session of the School of Pharmacy, in connection with the Pharmaceutical Society of Great Britain, was opened on Wednesday, when the opening address was given by Dr. T. A. Henry, Director of the Wellcome Chemical Research Laboratories, who has this year been awarded the "Hanbury" Memorial Medal of the Pharmaceutical Society. In his address Dr. Henry dealt with the position of this country with regard to synthetic daugs. The number of chemists who were beginning to take an interest in the possible therapeutic value of substances they prepared was steadily increasing, but the number of centres at which the necessary work could be done in Great Britain was, he said, lamentably small.

New Chemical Trade Marks Applications for Registration

This list has been specially compiled for us from official sources by Gee and Co., Patent and Trade Mark Agents, Staple House, 51 and 52, Chancery Lane, London, W.C.2, from whom further information may be obtained, and to whom we have arranged to refer any inquiries relating to Patents, Trade Marks and Designs.

Opposition to the registration of the following Trade Marks can be lodged up to November 5, 1927.

" KROMARD."

481,736. Class 1. Chemical substances used in manufactures, photography, or philosophical research, and anticorrosives. John Connolly Carroll, 60, Windsor Road, Forest Gate, London, E.7; merchant. June 20, 1927.

" VANBEENOL."

482,467. Class I. Chemical substances used in manufactures, photography, or philosophical research, and anticorrosives. W. J. Bush and Co., Ltd., 28, Ash Grove, Hackney, London, E.8; manufacturing chemists. July 16, 1927. (To be Associated. Sect. 24.)

482,468. Class 2. Chemical substances used for agricultural, horticultural, veterinary, and sanitary purposes. W. J. Bush and Co., Ltd., 28, Ash Grove, Hackney, London, E.8; manufacturing chemists. July 16, 1927. (To be Associated. Sect. 24.)

482,469. Class 3. Chemical substances prepared for use in medicine and pharmacy. W. J. Bush and Co., Ltd., 28, Ash Grove, Hackney, London, E.8; manufacturing chemists. July 16, 1927. (To be Associated. Sect. 24.)

Chemical Trade Inquiries

The following inquiries, abstracted from the "Board of Trade Journal," have been received at the Department of Overseas Trade (Development and Intelligence), 35, Old Queen Street, London, S.W.I. British firms may obtain the names and addresses of the inquirers by applying to the Department (quoting the reference number and country), except where otherwise stated.

DRUGS AND CHEMICALS.—A well-established Indian firm, with headquarters in Bombay and good connections in various other parts of India, is prepared to represent the interests of British manufacturers. (Reference No. 276.)

CAUSTIC SODA.—The Director-General, India Store Department, Branch No. 10, Belvedere Road, Lambeth, London, S.E.I, invites tenders for 75 tons caustic soda. Tenders due October 25, 1927. Specification and forms of tender obtainable from the above at a fee of 5s. per set, which will not be returned.

TIN. LEAD, ANTIMONY, ZINC, COPPER.—The Direction of State Railways, Prague South, is inviting tenders, to be presented by October 13, 1927, for the supply and delivery of 20,000 kg. of original English tin, 20,000 kg. soft Pribram lead, or other lead, 4,000 kg. of pure antimony, 2,000 kg. of pure zinc, and 1,000 kg. of phosphorous copper. (Reference A.X. 5201.)

LUBRICATING OIL.—The Lithuanian Railway Administration is inviting tenders, to be presented by November 3, 1927, for the supply of lubricating and cylinder oils. (Reference B.X. 3859.)

British Commercial Gas Association Meeting

The annual meeting of the British Commercial Gas Association was held at Southampton on Monday, Tuesday, and Wednesday, under the presidency of Sir Russell Bencraft, deputy-chairman of the Southampton Gaslight and Coke Co. On Monday evening there was a dinner on board R.M.S. Majestic. On Tuesday morning the president delivered his address, while in the evening a lecture on "New Health: the Importance of Health in Industry," was given by Sir Bruce Bruce-Porter. On Wednesday a paper on "The Commercial Prospects and Future Co-operation of the Gas Industry," was read by Mr. R. Halkett, general manager and secretary of the Sheffield Gas Co., while Mr. A. H. Barker (lecturer on heating and ventilating engineering at University College, London) made a report on some research carried out by him on "Flueless Rooms."

THE SOLUTION

IS A

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UNEQUALLED for ECONOMICAL, COOL GRINDING of CHEMICALS in ONE Operation

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Chemical and Pulverising Engineers

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Telephone: Victoria 0824

Commercial Intelligence

The following are taken from printed reports, but we cannot be responsible for any errors that may occur.

County Court Judgments

NOTE.—The publication of extracts from the "Registry of County Court Judgments" does not imply inability to pay on the part of the persons named. Many of the judgments may have been settled between the parties or paid. Registered judgments are not necessarily for debts. They may be for damages or otherwise, and the result of bona-fide contested actions. But the Registry makes no distinction of the cases, Judgments are not returned to the Registry if satisfied in the Court books within twenty-one days. When a debtor has made arrangements with him.]

LORKIN, Charles James, 19, Cathcart Hill, Tufnell Park, manufacturing chemist. (C.C., 8/10/27.) £19 15s. September 1.

Deed of Arrangement

EVANS, James Morgan, trading as J. M. EVANS AND SONS, Cocking Steps Mill, Netherton, and residing at Roseville, Scotgate Road, Honley, dyer and finisher. (D.A., 8/10/27.) Filed September 28. Trustee, G. W. Smith, John William Street, Huddersfield, accountant. Liabilities unsecured, £7,239; assets, less secured claims, £960.

Bill of Sale

CATTANAGH, John, 33, Howard Street, Gloucester, dyer and cleaner. (B.S., 8/10/27.) Filed September 30. 1100.

Mortgages and Charges

[NOTE.—The Companies Consolidation Act of 1908 provides that every Morigage or Charge, as described therein, shall be registered within 21 days after its creation, otherwise it shall be void against the liquidator and any creditor. The Act also provides that every Company signification and any creation. The Act also provides that every company shall, in making its Annual Summary, specify the total amount of debts due from the Company in respect of all Mortgages or Charges. The following Mortgages and Charges have been so registered. In each case the total debt, as specified in the last available Annual Summary, is also given—marked with an *—followed by the date of the Summary, but such total may have been reduced.]

BRYTE, LTD., London, W.C., manufacturing chemists. (M., 8/10/27.) Registered September 9, £100 debenture and £150 second debenture to Anderson and Stuart, Ltd., Sicilian House, Sicilian Avenue, W.C., merchants, and T. Hadley, 12, Fairlawn Crescent, Chiswick, metal chemists; general charge.

DAY, SON, AND HEWITT, LTD., London, W., medicine manufacturers. (M., 8/10/27.) Registered September 20, £12,000 debentures; general charge. *£7,100. 20, 1927

Satisfaction

CROCKATT (JOHN), LTD., Leeds, dyers and cleaners. (M.S., 8/10/27.) Satisfaction registered September 23, £10,000 (not exceeding), registered April 23, 1921.

Receiverships

DALE (W. H.) AND CO., LTD. (R., 8/10/27.) W. Eaves, Incorporated Accountant, of Bank Chambers, Chapel Street, Tyldesley, was appointed receiver on September 9, 1927, under powers contained in debentures dated February 6,

STAFFORD AND STAFFORD, LTD. (R., 8/10/27.) L. D. Woods, of 150, Southampton Row, W.C.1, ceased to act as receiver and manager for debenture holder on September 21,

THOMAS AND CO. (BURSLEM), LTD. (R., 8/10/27.) A. C. Hawkins, of 52, Liverpool Road, Stoke-upon-Trent, ceased to act as receiver or manager on September 1, 1927.

London Gazette, &c.

Companies Winding Up Voluntarily

ELSTREE BLEACHING AND DYEING GO., LTD. (C.W.U.V., 8/10/27.) W. J. Piggott, 22, Claremont Road, Luton, Beds, appointed as liquidator, September 16. FARRAR AND CO. (HONLEY), LTD. (C.W.U.V.,

8/10/27.) L. Netherwood, Sergeantson Street, Huddersfield, Chartered Accountant, appointed as liquidator, September 17.

M. AND L. HOLLERBUSCH, LTD. (C.W.U.V., 8/10/27.) By special resolution, September 14, confirmed September 29, W. C. Northcott, Chartered Accountant, 6, Great Winchester Street, Old Broad Street, and E. A. Shock, Certified Accountant, 34, London Wall, appointed as liquidators. Meeting of creditors at the offices of Holroyd, Northcott and Co., Char-tered Accountants, 6, Great Winchester Street, Old Broad Street, London, E.C.2, at 12 noon, Monday, October 17.

New Companies Registered

J. H. CROWDEN AND SON, LTD., 24, Greengate Street, Plaistow. Registered September 30. Nom. capital, £300 in £1 shares. Manufacturers of, and dealers in, chemical sundries, etc. Directors: Florence M. White, Helen G.

SWANSEA RESIDUES, LTD., 9, Mincing Lane, London. Registered as a private company on September 30. capital, £35,000 in £1 shares. To carry on business as refiners of, and dealers in, silver, lead, spelter, tin, zinc, copper and other ores, metals and minerals of all kinds, liquids, fuels, chemicals, tar and dyes, ammoniacal liquor, and all other residual products obtained from coal or coke, etc. Directors: Lord Glenconner, W. H. Weatherley, Lt.-Col. C. E. A. Browne,

J. Schloss, K. Grosche, G. Parker-Jervis.
WALKER AND WALKER, LTD., 5, Farringdon Street,
Liverpool. Registered September 30. Nom. capital, £1,000 in £1 shares. Quarry masters, etc., manufacturers of, and dealers in, lime, cement, mortar, concrete, and building materials, chemical manufacturers, oil refiners, stone crushers, tar macadam manufacturers, etc. Directors: H. A. Walker,

Handbook of Edinburgh College of Agriculture

THE Edinburgh and East of Scotland College of Agriculture has just issued its calendar for the season 1927-28. The college has a department of chemistry and agricultural and forest chemistry, staffed as follows:—Lecturer, Dr. A. Lander; assistant lecturers and demonstrators, Dr. W. T. H. Williamson and Messrs. J. M'Gillivray and A. Comrie. The advisory officer in soil chemistry is Dr. W. G. Ogg, who is assisted by Mr. W. T. Dow. The courses include those for the University of Edinburgh B.Sc. and D.Sc. degrees in agriculture, as well as for a diploma course; and for the B.Sc. degree in forestry. There are also courses in dairy work and horticulture. Both day and evening classes are held.

Transmutation of Elements: New Work

PROFESSOR A. SMITS, of Amsterdam, who has in the past few years published various papers on the transmutation of lead into mercury, etc., gives an account of his more recent researches in a letter published in Nature. The experiments discussed all deal with efforts to transmute lead into mercury, and the results are, on the whole, negative, so that for the time being judgment must be reserved. Investigations in various directions are being continued.

Benn Brothers' Other Journals

THE CABINET MAKER.—Soft Goods Number: Textiles for Furnishing; Goods on Approbation; New Books; Inside of a Mattress—XXXV.

"Direct Current Motor Control," by G. Win-THE ELECTRICIAN. dred; "Super Tension Cable Drums," by "High Tension"; "Small Water Powers," by F. Johnstone Taylor.

The Fruit Grower.—Demonstration described by Pictures and

Poster; Scientific Research for the Empire; Demonstration Day at Rothamsted.

GARDENING ILLUSTRATED.—Clematis to Plant Now; Dahlias at Crawley; The Heath Garden; "A Pond Garden," by George

THE GAS WORLD.—Annual Meeting of the British Commercial Gas Association—Special Report; Gas as an Aid to Health; Co-

Gas Association—Special Report; Gas as an Aid to Health; Cooperation in the Gas Industry.

The Hardware Trade Journal.—Merchandise Marks Act:
The Marking of Lawn Mowers; Ironmongers and Their Note Headings; Electrical and Gas Developments; Motor Transport.

The Timber Trades Journal.—Sir Ernest Benn addresses
Timber Men; "Dock Efficiency," by Albion Cliff; Soft Woods
Supplies in North-West Europe.

